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THE
GARDENER'S MAGAZINE,



CONDUCTED

By J. C. LOUDON, F.L.S. H.S. &c.

AUTHOR OF THE ENCYCLOPEDIAS OF GARDENING AND OF AGRICULTURE, AND
EDITOR OF THE ENCYCLOPEDIA OF PLANTS.

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PREFACE.

THE Sixth Volume of the Gardener's Magazine will be found equal to any that has preceded it, in the higher branches of professional information ; and as it contains a complete system of cottage gardening, with some highly improved plans of cottage dwellings, it surpasses, in point of general utility, all that have gone before.

Something has been said lately by a learned author, Sir Henry Steuart, in his *Planter's Guide*, of the ignorance of gardeners generally : but that they are, as a body, well informed, in both the theory and practice of their profession, and very well able to communicate their information to others, the manner in which this Magazine is supported by their contributions is a decided proof. Gardeners may certainly be considered, in common with others of the laborious classes of society, ignorant of classical learning ; but this is a species of knowledge of exceedingly little use, and is gradually becoming neglected in all countries, in proportion as the inhabitants advance in civilisation. We have above alluded to the Essays on Cottage Gardening (Articles III. IV. and V., p. 167. to 208.), written in competition for certain prizes which we offered and have awarded. These essays are composed by gardeners who have had scarcely any education beyond what they have given themselves ; and the essays published are only three out of ten, which were all nearly equally well written. We might refer to many other articles in this Volume as proofs of the general intelligence of gardeners ; but, having mentioned these essays, we will limit our remarks to them, and ask any man, however learned or scientific he may be, whether any thing can be more complete and systematic of its kind than the fourth of these essays ? We by no means intend to flatter gardeners, so as to render them content with the knowledge which they already possess ; we only wish to stimulate them to make every exertion to raise themselves to the highest possible grade in their profession. We must also be allowed to say, that the more our acquaintance with gardeners is increased, in consequence of conducting this Magazine and the *Magazine of Natural History*, the more we are

astonished that men, with so very defective a school education as is at present generally obtainable by the class of society to which the parents of working gardeners belong, in Scotland, as well as England, should have been able to effect so much by reading, by observation, and by attempts to commit their ideas to writing. This fact shows that a very considerable degree of mental cultivation is perfectly consistent with continued bodily labour; and it enables us to look forward with confidence to a time (we trust not far distant) when all mankind shall have become intelligent and enlightened; and when, in order to forward this desirable state of things, a degree of school education to children shall have become a necessary of life. We care nothing for the sneers of those who consider such ideas chimerical; and we do not participate in the fears of those who affect to think that, when all are learned, none will be found willing to work. To know and to feel that knowledge is pleasure as well as power, is with us a sufficient argument for desiring that all mankind, without exception, should have an equal chance of enjoying this power and pleasure; and they can only obtain this by being subjected to a high and equal degree of school education from infancy to the age of puberty. Till this is the case, no man can have a fair chance, either in society generally, or in his own particular class and profession.

Next to the advancement of the science of gardening, and the improvement of its practice, our greatest ambition in conducting this Magazine is to point out to all our readers the incalculable advantages of early school education for children, and of self-improvement for young men, and for all who are not beyond the age for acquiring new ideas.

J. C. L.

Bayswater, Nov. 16. 1830.

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Duncan, Mr. William	480	J. T.	-	Vallance, Mr. Edmund	-
Dykes, Mr. John	501	Juvenis Ostor	-	Vallat Aine, M.	-
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		N. T.	-	Z.	-
		O., near Lancaster	-		
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THE
GARDENER'S MAGAZINE,
FEBRUARY, 1830.

PART I.
ORIGINAL CORRESPONDENCE.

ART. I. *Notes and Reflections made during a Tour through Part of France and Germany, in the Autumn of the Year 1828.* By the CONDUCTOR.

(Continued from Vol. V. p. 649.)

PARIS, Sept. 6. 1828. — We were in Paris and its neighbourhood till October 10., when we left that city for Germany; we returned on December 10., and remained till the middle of January, 1829. After some general remarks on the vicinity of Paris, as compared with the vicinity of London, we shall arrange our notes under the heads of Public Gardens; Royal Gardens; Commercial Gardens; Villa Gardens and Country Residences; Agricultural Establishments and Manufactories connected with Agriculture; Architectural Improvements; and Garden Societies, Institutions, and Literature.

The natural circumstances of the vale of London and the plain of Paris differ in various particulars. The surface of the country and the soil in the vicinity of Paris are more favourable to gardening than they are in the neighbourhood of London; but the climate and almost every other circumstance are less favourable. This is speaking of gardening as including all its branches, and with particular reference to landscape-gardening. The surface of the country in the neighbourhood of Paris is more irregular than that around London; and those irregularities have more character, because they are for the most part produced by masses more or less stony or rocky. The hills at Montmartre and Montmorency are less like heaps of alluvial soil or gravel than the hills at

Highgate and Greenwich. The soil is more favourable around Paris, because it is every where calcareous, and on a dry bottom. The climate is better adapted for ripening fruits and blossoming fine flowers than that of London ; but, from the heat and dryness of the air in summer, and the severity of the winter, greatly inferior to it in the production of culinary vegetables, and indeed in the growth of plants of nearly every kind throughout the whole year. It is particularly unfavourable to the culture of herbage grasses ; and hence the difficulty, amounting almost to an impossibility, of producing close green turf. In respect to water, as far as landscape-gardening is concerned, London and Paris may be considered on a par ; for, though the Thames is broader than the Seine, the banks of the latter river are more varied in natural character than those of the Thames. With regard to culture, the climate of London renders watering comparatively unnecessary : in the neighbourhood of Paris, the watering of crops in the open air is one of the principal summer labours of the gardener. The scenery around Paris has an advantage over that round London, in possessing a number of natural woods of considerable extent, and a greater proportion of open lands and waste, surrounded by high cultivation ; round London very little of nature remains. Thus much as to the natural circumstances of the vicinity of Paris, compared with those of the vicinity of London.

In *artificial circumstances* the two districts are strikingly different. The vicinity of Paris is all nakedness and long lines ; that of London all clothing and accumulations of houses and trees, with abrupt or circuitous lines. The approaches to Paris on every side are characterised by straight roads, straight rows of trees, straight avenues and alleys, and straight lines in almost every thing. The approaches to London are not characterised by lines ; the roads, fences, trees, and alleys in woods, are irregular, and neither strikingly crooked or curved, nor always straight. In the neighbourhood of Paris every thing bears the marks of legislative influence : the dwellings of every village and every detached house are numbered ; the city has a marked boundary, is only to be entered through certain public gates, and, on leaving it, you are once in the country. Round London it is on every side difficult to say where the city ends and the country begins ; one passing insensibly into the other for miles of distant green fields, gardens, villas, streets, and churches blended together, till at last the traveller finds himself in the city. There is, unquestionably, much more of the city of London than round Paris, because there is much more

but round London the art displays itself in a different way ; the exertions of individuals in building and gardening are every where apparent ; but there are no particular evidences of a controlling government or police ; and the different entrances to the metropolis, being unmarked by gates, differ only from the entrances to an English village by being on a larger scale. Every thing in the neighbourhood of London has an air of liberty, even to the indulgence of caprice or whim ; every thing round Paris bears an air of restraint, even to the size of the paving stones in the highways, and of the panes of glass in the windows, and the numerical letters on the houses. In London and its neighbourhood you have streets and roads paved, gravelled, laid with flints, or Macadamised with granite ; in Paris and its environs you have either a regular causeway of the same width, curvature, and of the same-sized stones, or the native soil without any artificial covering. In and around London you have Grecian, Roman, Italian, Gothic, Moresque, and Chinese windows of innumerable varieties, and panes of all sizes, from that of the lattice window glazed in lead lap, to the plates of glass in some private dwellings, as Mr. Hope's of Duchess Street, and some shops, as several in Regent Street, Oxford Street, and New Bond Street, of the size of an entire window. In and around Paris there is very little variety in either the size or architectural style of windows, scarcely any Gothic or lattice-work, except in the churches, and the panes of a palace are not much larger than those of a cottage.

The geometrical character imposed on the roads by the government has been imitated by the inhabitants in every thing ; and may be recognised in their woods, gardens, divisions of fields, vineyards, and even in the prevalence of the row culture in spade aration ; most certainly in the correctness with which French labourers dig ditches or plant trees in rows by the eye, without the use of a line, which very far surpasses any thing to be met with in England. Among the innumerable boundaries of plantations and hedge divisions of fields which are seen every where in England, there is not perhaps one line in ten that is straight ; in the same boundaries and hedge lines in France, there certainly is not one line in ten that is crooked. Nothing is crooked or irregular in France ; nothing is left to chance ; every thing is regulated by authority. But a great deal in England being also regulated by authority, how comes it that the result is sameness and uniformity in the one country, and irregularity and variety in the other ? The authority in France is one, that of the central

government: in Britain the authorities are many; those of the counties, the parishes, and the local commissioners of public works. There seems to be another reason for the prevalence of geometrical forms and lines in France, and we may say the Continent generally. In France, till lately, all public situations were filled exclusively by the class designated as noble, and which, for the greater part, were educated and instructed more especially in those departments of knowledge, such as geometry, fortification, &c., which tended to fit them for the army. In Britain important situations of every kind are procured more through wealth in the candidate or his friends, than through any other cause; and wealth, even if it should be accompanied by ignorance, generally enables a man to think for himself, and act accordingly. This is more particularly the case when that wealth happens to have been accumulated by the talent or industry of the individual. Hence we see the business of one parish, or the laying out and repairs of one line of road, managed on one principle, and another parish and road on a different plan, or perhaps without either plan or principle: one parish employing their poor among the farmers, another employing them on the roads; one road convex, and another nearly flat, &c. There is this convenience in adopting geometrical forms, that, when they are objected to, they can always be referred to a definite reason. No man can dispute the fact, that the shortest line between any two points on an even surface will be straight; but if it were attempted to lay out a curved or irregular line between these two points, as possessing particular local advantages, or as being more beautiful, every one might dispute the advantages and the beauty.

The dry and comparatively clear atmosphere, the dry soil, and the airy open surface of the country, in consequence of the almost total absence of hedges as separations or divisions of property, or enclosures of fields, render the environs of Paris, we should imagine, much more healthy than the environs of London; but we do not think it is in the nature of the climate and soil to support that deep, luxuriant, and perpetual green vegetation which abounds everywhere in the vale of the British metropolis. As a proof of this, we may refer to the vegetation of the remains of native forests round the two capitals. In those of France there be found in the winter season few evergreens, and scarcely any green turf: in Windsor Forest we have hollies; Hounslow Heath the furze; and on Box Hill the box juniper, and the yew. All these shrubs are rare in the

woods in the neighbourhood of Paris. In winter, indeed, the difference between the environs of Paris and London is still more remarkable than in summer, from the almost total absence of evergreen shrubs in the gardens and plantations of the former, and their great abundance in those of the latter. The excellent gravel and turf of London, and the very bad gravel and turf of Paris and the Continent generally, have been too often mentioned to have escaped the reader's recollection.

The evidences of *wealth and taste* are incomparably greater in the neighbourhood of London than in the neighbourhood of Paris. The character of the Parisian taste consists in display and superficialness; that of the English in comfort and neatness: the Englishman seems to wish to be thought happy in his family; the Frenchman in the society of his friends and in the eyes of the public: eating, drinking, and sleeping, call forth the social sympathies of the Englishman; talking, hearing, and rejoicing, those of the Frenchman.

The City of Paris as compared with London is, we think, a better planned congregation of buildings. The outer and the inner boulevards, like our breathing zones (Vol. V. p. 687.), are at once sources of health and of utility; for they admit a free current of air, and persons going from one distant part of the town to another may always, by means of the numerous public vehicles, which ply in both directions in these zones, save both time and fatigue. The streets of Paris are, for the most part, narrower than those of London, and they are generally without footpaths. It would certainly be advisable in this city, as in most of the old ones of Europe, for the proper authorities to form a plan for widening and finally arranging the streets, the average supply of water, gas, heat, &c., and to provide for its gradual execution, say in the course of half a century. By promulgating this plan, which ought to include also provision for indefinite increase outwards, property and situations now peculiarly favourable for business would gradually vary from their present to their ultimate value, whether greater or less than at present; so that the execution of the plan gradually and at distant periods would be nothing like so expensive as its immediate or early execution. Paris, in its present state, where the houses are so close together, and where so many families are lodged under one roof, appears to us to be very favourably circumstanced for being heated by public companies. Whether steam or hot water would be better adapted for this purpose, we are not prepared to state; but nothing could be easier than to heat whole streets from one

source*, and if steam or hot water were objected to, hot might be supplied in the same manner, and subject to the same regulations, as the supply of coal gas. Coal gas, besides serving for lighting the streets, might, we should imagine, answer every purpose for the greater part of French cooking. In all great cities provision should be made for the introduction of subways, which will ultimately be found nearly essential as sewers. The time may probably also arrive, when all the footways of the principal streets in European towns will be protected from rain by verandas of glass, projected from the houses. In general these verandas should not be projected immediately over the first or shop story, which would, where the shops fronted the south, accumulate too much heat; but higher, and over the second or third story, so as not to interfere with the free circulation of air. Such verandas would give a line of lofty, slender, iron columns along the kerb stones of the pathways, and these columns might at the same time serve as lamp posts. By having covered excavations in the pavement near the bases of the columns, to receive pots, boxes, or a mass of good soil, some individuals might cover these columns, and also, if they chose, the under side of the veranda, with the most elegant creeping plants, or with vines, pumpkins, or gourds. †

There is, on the whole, more of dignity in *the architecture of Paris*, than in that of London; because the building ma-

* In 1812 B. Deacon, the patentee of a mode of heating and ventilating by air forced through hot water, proposed to supply hot air to all the houses in Red Lion Square, from a small ornamental building to be erected in the centre of the square, and worked by the parish paupers. The thing was perfectly practicable, but no one paid the slightest attention to the proposal. In the present state of knowledge on the subject of heating, nothing could be easier than to supply every room in every house of the London squares, from an obelisk in the centre of the square, with as much hot water as would keep the air of the room to the temperature of 60°. All London may be heated in the same manner, at, as we believe, incomparably less expense of fuel than at present. There would then be only one fire in each house for the purpose of cooking, and, in consequence, much less smoke in the atmosphere. Indeed, the hot-water system might be most profitably applied by all the occupiers of houses containing five or six rooms, as it would save all the fire-places and fires, except one for the kitchen, from which the hot water might be made to circulate all over the house; or it might heat air in a box to be so circulated. This also was long ago proposed by Count Chabannes, but excited no attention.

† The same thing might now be done in London, by placing a climbing plant, a *Cobæa* for example, in a tub in the coal-cellar, under the pavement, and leading its stem through a small hole to the lamp post; but we doubt if the effect would be worth the trouble. Guarding such plants from injury would amuse the police, and at last refine and polish the manners of mischievous persons, and all such as would, if flowers were planted in Kensington gardens, gather them if not prevented.

terial, stone, has an appearance of greater durability, and because the openings of the doors and windows are larger, and for the most part have more allusion to Grecian or Roman architecture. But what spoil almost all the buildings in Paris, and almost all the chateaus in France, from the Tuilleries down to the commonest dwelling-house or stable, are their intolerably high roofs. What is the reason why a high roof in every building of the slightest pretensions to architecture is displeasing? Is it simply because high roofs are no longer in fashion either in France or in England? or is there any reason against high roofs which is founded in the nature of things? High roofs, when they are unavoidable, or believed to be so, are not displeasing in a wide barn, nor covering a sheepfold, nor in a manufactory; because the distance between the side walls is so great, that to have formed a low roof would have required more expense than the end in view would have justified. High roofs are not displeasing in cathedrals, partly from the same reason, partly from their antiquity and the associations connected with them, and partly because they are most commonly formed of materials of more than common durability, put together with more than common skill; add also that they are sometimes covered with lead, the parallel ridges formed by which convey, to a certain extent, an expression of design. Thus, as we have said above, high roofs are not displeasing when they are governed by necessity, or by any other overruling cause. But why are high roofs displeasing, where they are not necessary, or where it is believed they can be avoided? Why, in short, are they built as seldom as possibly by modern architects? Because roofs, from their sloping surface, and the temporary nature of the materials of which they are composed, do not admit of receiving the impressions of that sort of architectural design which is appropriated to walls of masonry. Therefore, a high naked roof, over walls characterised by architectural design, is an incongruous assemblage of lines and forms, as well as of materials. It is true that the incongruity in respect to materials is as great when the roof is low as when it is high; but though it is great in reality, it is not so great in appearance, and the fact is overlooked in the superiority of the architectural expression produced. If, therefore, there is some well founded reason in the human mind, and which ought to have been felt by architects in every age, against high roofs, how comes it that the palace of the Tuilleries has a roof so preposterously high? It is certain that this roof must have been approved of, and even thought beautiful at the time it was produced; how does it happen, then, that by the present age it is almost universally

disliked? The reason, we think, can only be, that the architects and their employers of the past age were less refined in their taste than those of the present day. The well founded reasons which we have assigned against high roofs, when they are not necessary or inevitable, were not developed in their minds, because the taste of the age did not call for such a refinement in their art. High roofs have many recommendations in point of utility, convenience, and durability, and they afford room for a conspicuous display of timber and carpentry; the principle of utility, therefore, and the influence of the carpenter, seem to have prevailed over the principle of architectural expression. In the advancement of art, the progress is from the expression of the subject, or of mere utility according to the nature of the subject, to the expression of design according to the nature of the art employed on the subject. Low and partially concealed roofs, therefore, are the consequences of a greater degree of refinement in the taste of the architects of the present day and their employers, than existed among the architects of France and their employers at the time the Tuilleries were built. Just before the Revolution this deformity of high roofs was felt as an evil in the palace of Versailles, and a small portion of the roof of that palace was lowered and concealed by a parapet during the reign of Louis XVI., a subsequent portion by Napoleon, a third by Louis XVIII., and the alterations are continued by the present king.

Another deformity in the buildings of Paris, perhaps even more glaring than in the street houses of London, consists in the stacks of chimneys. Why is it that so essential a part of every dwelling-house is almost always viewed as a deformity rather than as a beauty? Simply, because in ordinary street houses the stacks of chimneys are very seldom subjected to architectural design. A straight row of houses of the same height, or a regular composition of street houses, with all the stacks of chimneys of the same dimensions, and of the same height above the roofs, so far from being injured in effect by the chimneys, is improved by them. If the chimney tops of street buildings were as regular and uniform in distance, size, and form, as the windows of such houses commonly are, the one feature of a house would have as much architectural beauty, and be as much approved of, as the other; because they are both equally essential to habitableness. Whatever belongs to a building is capable of receiving the impression of design, and may be made to cooperate in the cultivated or refined expression of that building as a whole. Even the roof of a dwelling-house produces a better effect when partially seen, than when totally concealed; because a roof always enters

into the idea of a house. And what would a dwelling-house be without the appearance of chimneys? Possibly very handsome as an architectural composition, but certainly deficient in good taste, because it would not appear to be what it is. It is to be regretted that the architects of England have their attention so much directed to churches, public buildings, palaces, and villas, while the taste of every-day objects in architecture is left to chance. The true remedy for this evil will be found in the high cultivation of the taste of the middle and lower orders of society. If every young person were taught to draw, and persevered in drawing and in reading on the subject of pictorial composition, we should soon have a reform in street and cottage architecture. There must always be a demand before there can be a supply. In excuse for having gone so much into detail on the subject of roofs and chimney tops, we submit that it is by incidental discussions of this kind, directed to single points, that the young working gardener, for whom we chiefly write, and whose mind has not undergone a regular training, is made to comprehend and apply general principles.

The agriculture of the environs of Paris differs from that of the vale of London, in being almost entirely in aration, whereas with us it is almost entirely in grass. A greater portion of the surface for twenty miles round Paris is under wood, than is the case for the same distance round London; because in France, generally, wood as a territorial product is of more importance than in England. A part of the surface is covered with vines; but this part, the market-gardens, the nurseries, and the orchards, bear nothing like the same proportion to the general surface, that gardens, orchards, and nurseries do in the neighbourhood of London. The farms in the neighbourhood of Paris are small, generally under 50 acres, and the culture various, including coppice wood, corn, pulse, lucern, roots, and vines; those in the neighbourhood of London are considerably larger, from 50 to 300 acres, and the culture limited to very few objects, chiefly corn, grass, and roots. In both tracts there are farm gardens, in which the culture of culinary vegetables is carried on by the aid of horses or cattle, and combined with the raising of common farm produce; but the number, as well as the size, of these is much greater round London than round Paris.

The personal character of gardeners and farmers in the neighbourhoods of the two capitals remains to be compared. With the exception of a few individuals in Paris who have been regularly educated, and who, if they can be equalled, can at least not be surpassed in scientific attainments, by any

cultivators in or about London, the great majority of French gardeners and farmers are deplorably ignorant, not only in the science of their profession, but in general knowledge. Two thirds of them, we should think, can neither read nor write; they are badly clothed, have only wooden shoes in winter, and go barefooted in summer. The French spade has not a hilt, but a very long handle, and in digging is thrust in by the strength of the arms. In hard ground a pick is used; so that in neither case are shoes wanted. There are very few men who work in gardens in France, who, in knowledge, rank above the common country labourers; and this will not soon be otherwise, because it is not likely that there will soon be a great demand for intelligent serving gardeners in France. The French labourers, however, in another generation will become as generally enlightened as British gardeners now are, in consequence of the liberty and sense of citizenship which they at present enjoy, and of the extraordinary exertions beginning to be made by the wealthier class to spread among them useful education, and propagate and establish every where arts and manufactures. The great thing is to be able to communicate to the ignorant of every country a sense of their ignorance, and to convince them that all useful knowledge may be possessed by the poorest as well as by the richest, without interfering with the labours by which the former obtain their daily bread. It will take at least a generation to do this; but when once it is done, the poor, that is, those who are now and ever will be the great mass of society, will take care of themselves. Of this they may be certain, from reflecting on what human nature is, that, if they do not, nobody will do it for them; for no one class of society will ever effect any great good for any other class. It is with classes as with individuals, every one must help himself: God and fortune, as Franklin says, will then also lend their assistance.

The improved condition of the labouring classes of countries, which we contemplate, when it shall once arrive France, will give in-door employment to the wives and daughters of the country population, whom it is lamentable to at present performing those labours in the gardens and fields which in England are only performed by men. There are various light out-of-door employments, for which women and children are well adapted, and which in moderation, in all weather, and with broad-brimmed straw hats and good stockings, will neither injure their health nor spoil their form or complexion; points that both in a physiological and moral view ought never to be lost sight of: but at pre

the neighbourhood of Paris, women may be seen performing the offices of masons' labourers, holding the plough, driving harrows, digging, picking, wheeling a barrow, and splitting timber for fuel. This state of things is perhaps in a great measure the result of the long and continued wars which have drained the country of the men of this class; and it is to be wished, above all other things, that the mass of this and of every other people might speedily become sufficiently enlightened to know their own power and importance in society; sufficiently united to cooperate in abolishing all slavery, mental and corporal; to put down monopolies of every kind; render trade universally free; and to resist all attempts of their rulers to lead them into wars, or to greater expense in any way than is necessary for the ends of good government. The first step to attain these objects, and to maintain them, is the establishment of representative, or what the noble Jefferson calls self, government; and to this approaches are gradually preparing in both countries, and, it may be said, throughout Europe.

The progress which the French have made in the improvement of Paris and its environs, since we first saw them in 1815, is very considerable; and what is the more gratifying, this improvement is most obvious in public works applicable to the uses of every body. Such, for example, as widening the streets, adding foot pavements, lighting by gas, the formation of commercial markets of a variety of kinds, the establishment of manufactories, &c. &c. The improvements in the environs are not quite so obvious; but, still, the number of nurseries, tea-gardens, and small villas, has increased. It is gratifying to observe that not much expense has been bestowed on the royal palaces; the present king has introduced the culture of the pine-apple in the royal forcing-ground at Versailles, but he has done little to the buildings there or elsewhere. It is well for a French king of the present day to have sagacity enough to think it unnecessary to care for his successors.

Whatever may be the difference in the wealth, prosperity, and happiness of the two countries at present, we may be certain that they are ultimately destined to become as nearly the same in these particulars as the difference in geographical circumstances will permit. France, we have given it as our opinion in former parts of this tour, and in the *Magazine of Natural History* (Vol. II. p. 75.), possesses a climate more favourable to the developement of human happiness than that of Britain. It will not, therefore, we trust, be alleged against us that any part of the preceding general

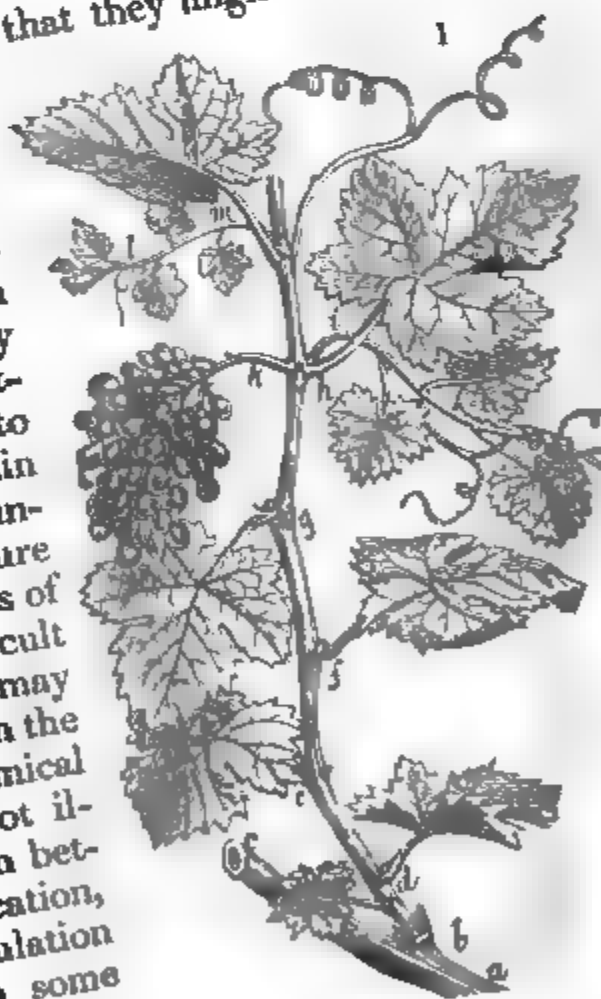
views have been influenced by prejudices against a nation that we love and esteem. In our next we shall proceed to details, commencing with the public and royal gardens.

(To be continued.)

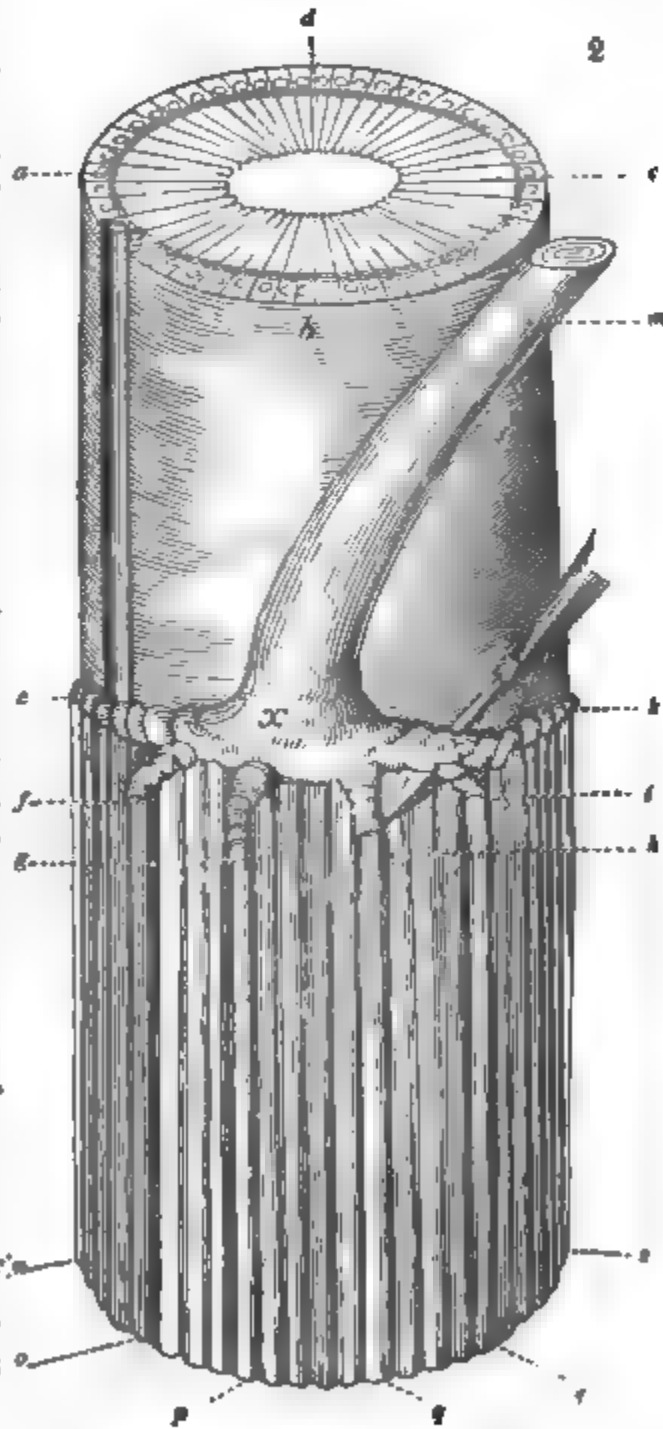
ART. II. *On the Anatomy of the Vine.* By WALTER WILLIAM CAPPER, Esq., Bath.

Sir,

My attention has been engaged for some time on the anatomy of the vine, which I have found extremely interesting; particularly so, from the assistance I have derived from the use of the chemical tests. I am fearful, however, that my observations will not be deemed worthy of your notice, from the expense of inserting the number of drawings which I have necessarily made for the better explaining some particular parts; but should you think otherwise, they are much at your service. At the same time, I must confess, I should like to attract the attention of the practical gardeners to the anatomy of plants, especially the vine, that they might be convinced, when they cultivate it, that their care and attention are bestowed on a structure which is organised, and possesses a vital principle, consequently capable of suffering from neglect, and indeed only thriving through proper treatment. I will endeavour to make my remarks so plain that they may be easily understood; for I can assure them, the prominent parts of the vine are not so difficult to comprehend as many may imagine, particularly with the assistance of the chemical tests. Perhaps I cannot illustrate the use of them better than by their application, to show a partial circulation of the sap, and also some part of the anatomy of the branch of a vine.

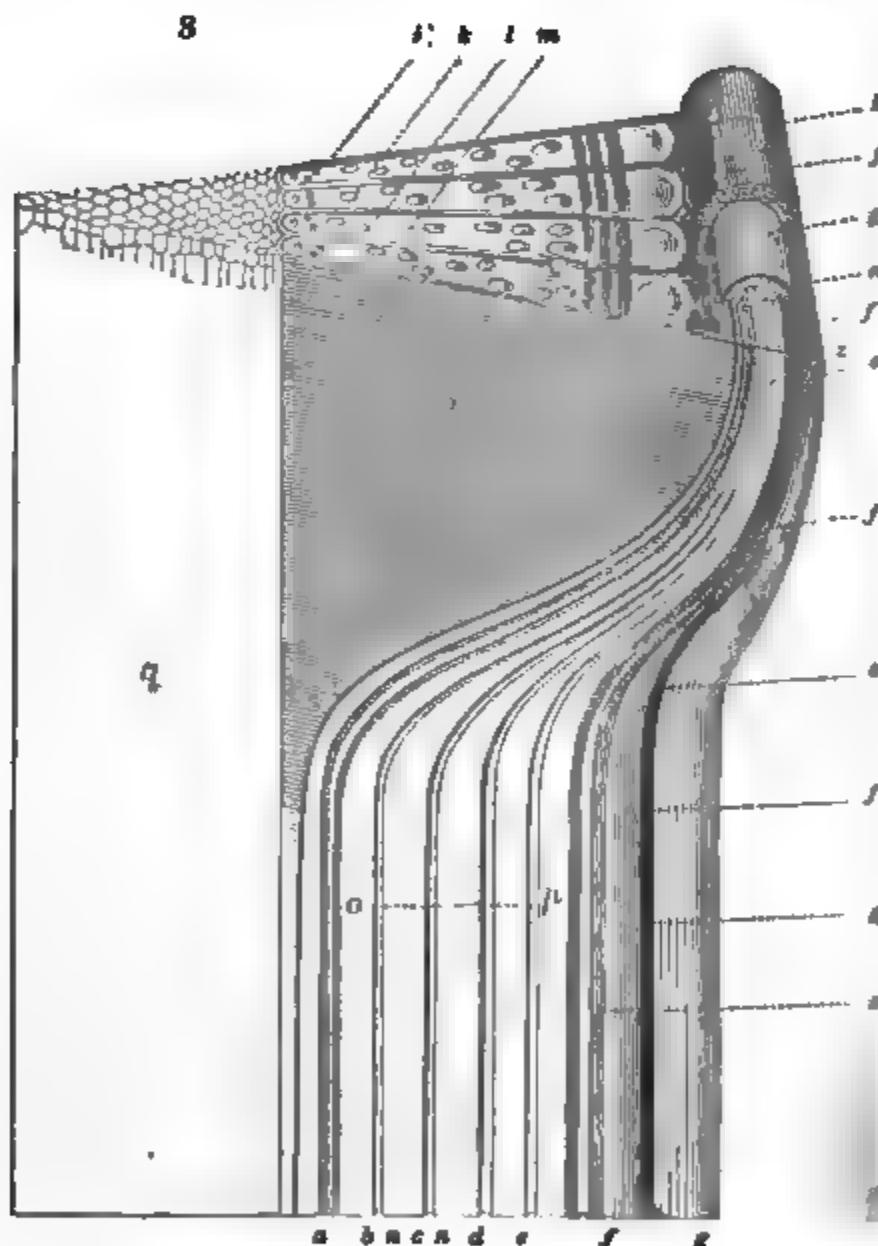


The part between the joints of the vine, as well as of other plants, is called the *collet* by the French writers, and that name I shall use for it. In *fig. 1.* the joints are opposite to *d e f g h*, and the collets lie between them, as from *d* to *e*, and from *e* to *f*, &c. On cutting one through, of half an inch thick, with a sharp knife, the separated ends will exhibit, with the assistance of a magnifying glass, a beautiful organised substance, but all the parts so blended together, that no distinction can be discovered between the bark and the wood. But to enable them to be more clearly distinguished from each other, chemical aid must be resorted to. As few practical gardeners are chemists, it will be requisite to explain to them upon what principle the following changes or precipitates take place, as they will frequently occur during the discussion of this subject. To facilitate that knowledge, I recommend their procuring three small flat-bottomed glass bottles; one to contain a solution of the prussiate of potash*, being a salt composed of prussic acid and potash; the second a decoction of oak galls, or of the teas from China, being vegetable productions, containing gallic acid combined with other substances; and the third a solution of the sulphate of iron, a salt composed of sulphuric acid and iron. Then place a little of the solution of the prussiate of potash, by means of a brush (fastened to



* Throughout I shall apply those names for the tests, by which they are most commonly known.

the cork of the bottle by a bit of wood), on a piece of white paper, and, about 1 in. from it, deposit as much of the sulphate of iron; afterwards double the paper between them together, and the instant the two solutions unite, a beautiful blue precipitate or sediment will be seen, which colour is commonly called the Prussian blue. This precipitate arises from the union of the prussic acid in the prussiate of potash, with the iron in the sulphate of iron. Again, place on a bit of paper the decoction of oak galls or tea, and add the sulphate of iron as before; as soon as they unite, a fine black precipitate will be discovered, similar to common writing-ink; this black colour arises from the gallic acid in the decoction, precipitating the iron in the sulphate of iron.



On looking attentively on the separated ends of the the eye may easily perceive that the circle round the

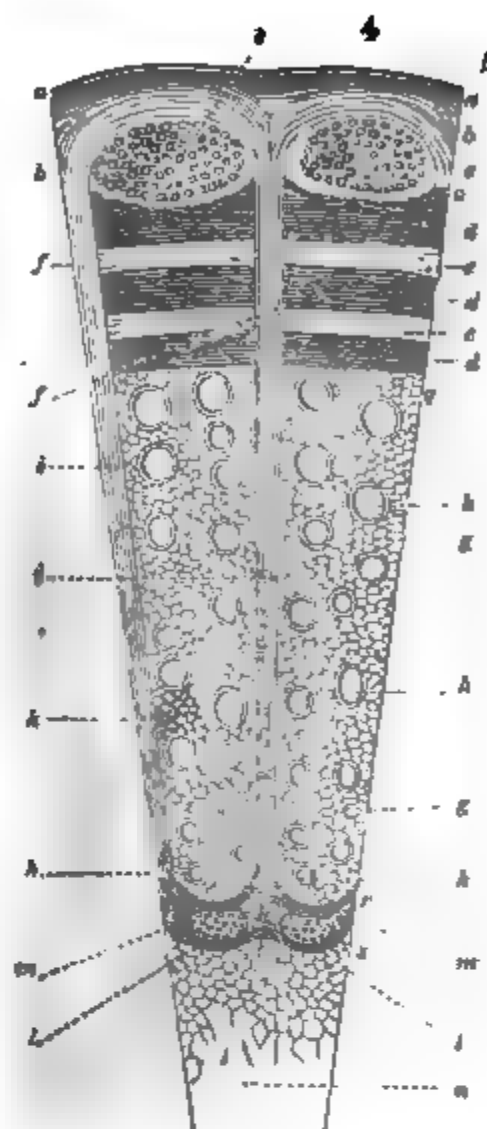
composed of many divisions; I have found them to vary from 40 to 55. *Fig. 2.* represents a horizontal view of a collet, containing a supposed number of 48 of such divisions within *a b c d*; but they are there necessarily drawn small, to exhibit the whole quantity. But *fig. 3.* represents four of them together, on a larger scale, at *i k l m*, that a more perfect idea may be formed of their union. Now, as nature formed every one of these divisions exactly alike, let us avail ourselves of such subdivision, and simplify our investigation, by discarding from our minds forty-seven of them and keeping our attention entirely on the remaining one. These divisions act independently of each other in the collet, and are only united by the cellular texture to each other, as will hereafter be more fully explained.

We will now proceed to simplify again our investigation of this single division, by the assistance of one of the chemical tests; for, on applying the sulphate of iron, from the third bottle, to the surface, the bark will instantly become discoloured by various shades, but no alteration will take place on the wood or pith: now, had it not been for this precipitate, the various parts of the division would have appeared to the eye so blended together, that it would have been a difficult matter to have pointed out where the bark terminated, or where the woody parts ended. These pleasing effects upon the bark are produced in consequence of their vessels naturally containing gallic acid, in a fluid state, similar to the liquid in the second bottle; the sulphate of iron being applied to them produces the black precipitate upon the bark, as before explained, when part of the contents of the second and third bottles were united.

But the various parts may be still more clearly distinguished from each other, by cutting with a sharp razor a thin slice from a collet, with the assistance of a little regulating screw-machine, which shall be hereafter described. The slice, when taken off, should be placed upon a piece of glass, and moistened with the sulphate of iron by a brush. By looking at the slice held up to the light, through a strong magnifying glass, the various parts of it, particularly the bark, will be distinctly seen. The dark circle is the liber, situated round the wood. As its vessels contain more gallic acid than any other part of the bark, it consequently precipitates a greater proportion of the iron, and thereby produces a more dense colour. The outside of the liber exhibits various lighter shades and figures, which are the parts composing the vascular and cellular texture; the outside of the circle is the cuticle; within the dark circle

of the liber, and nearest to it, is the sap wood or alburnum, full of small holes; on the margin of the pith, including a little of the pointed parts of the divisions of the alburnum, is the medulla sheath; and, in the centre of the whole, is the pith or medulla. In my future description I shall use the word *alburnum* for the sap wood, *medulla* for the pith, and *cuticle* for the outward covering of the whole.

Fig. 4. is supposed to represent a horizontal view of two entire divisions, with the precipitate upon them, instead of one, for the sake of exhibiting the cellular or divergent ray between them. It is drawn upon a large scale, that the larger vessels, which compose a division, may be the more conspicuously seen.



a a, Cuticle	-	-	-	These together are commonly called the Bark.
b b, Cellular texture	-	-	-	
c c, Vascular texture	-	-	-	
d d d, Fleshy vessels	-	-	-	These form the Liber from p to q.
e e, Ligneous vessels	-	-	-	
f f, Cellular or divergent rays of the bark	-	-	-	
g g, Concentric layer	-	-	-	These form the Alburnum from q to r.
h h, Ascending sap-vessels	-	-	-	
i i, Cellular rays	-	-	-	
k, Horizontal vessels	-	-	-	These together are commonly called the Al- burnum or Sap Wood.
l, Primitive concentric layer, wherein are	-	-	-	
m m, The spiral vessels	-	-	-	
n, Medulla.	-	-	-	

Fearful that *fig. 4.* may not have been sufficiently explanatory to a beginner, I beg to recommend his dissecting a collet himself, of 4 in. long; but, previously, let it lie 48 hours in water. Then, with the assistance of a moderate magnifying

glass, the various parts will be readily discovered, lying in a longitudinal direction, somewhat similar to *fig. 5.*; and, as he proceeds, let him compare the parts, as they arise to his view, with the engraving, that he may know what to remove and what to leave.

a b c d represent the outward appearance of a collet, except at

e f, where the two layers of the cuticle are separated.

g, The cellular texture, which lies under the cuticle, as well as round the bundles of the vascular texture at *k*; and it invariably lies between every division of the bark and of the alburnum, forming the cellular or divergent rays.

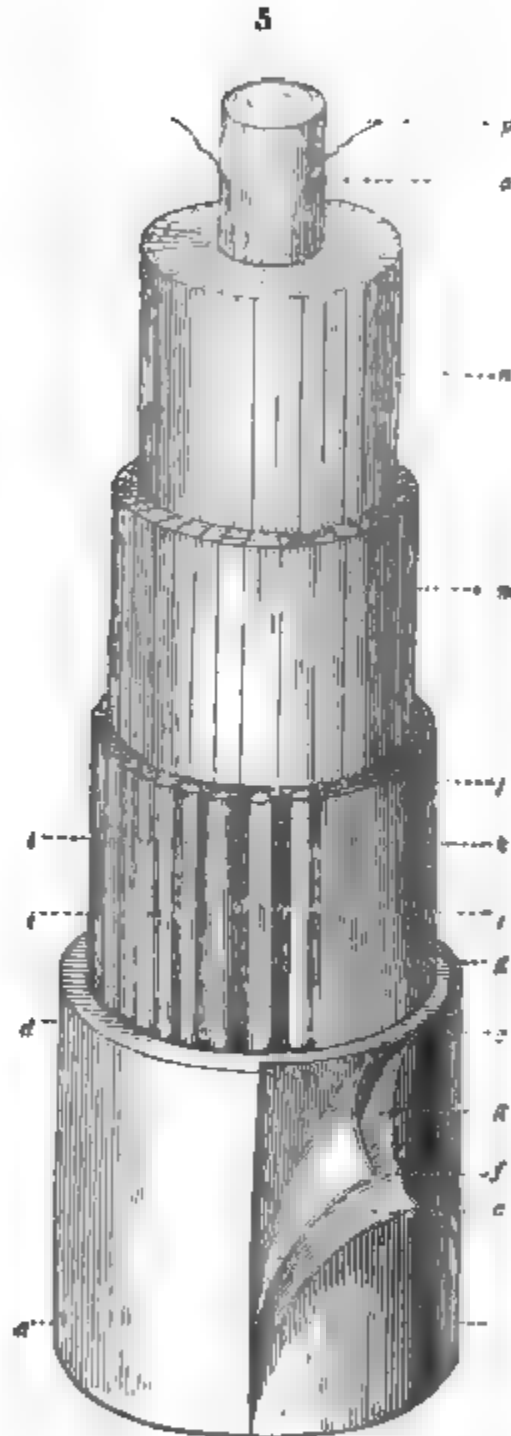
iii, Various bundles of vascular texture, from which the cellular texture is removed, that they may be more distinctly seen; at *k* it is left, but the ends of the bundles may be seen at *l*.

m m, The liber; each division that composes it lies under its own particular vascular bundle; see the tops of them lying in front of each division of liber, from *l* to the opposite side.

n, The alburnum containing the ligneous divisions, which correspond exactly in number with the divisions of the liber and vascular bundles.

o, The medullary sheath, composed of the primitive concentric layer with the spiral vessels therein.

p, The medulla.



I shall refrain from further observations on *figs. 4* and *5*, conceiving that the dissection of the collet, with their assistance, will have been sufficient to enable a beginner to comprehend and distinguish the various parts that compose a division. I will now proceed to describe the ascending sap-vessels of the alburnum, marked *h h* in *fig. 4*. A longitudinal

view of them may be seen in *fig. 3.*, at *b c d e*, whence they may be traced upwards to *z*, at which place they pass outwards, and lie in front of the four divisions *iklm*, as will be fully explained.

The ascending vessels carry the sap from the roots to the leaves; and as I intend to describe the ascent of it, in its own natural course, charged with a solution of the prussiate of potash, the following remarks should first be made, that its operation may be well understood:—

Having observed with what facility water was absorbed by plants of every description, it struck me that it might be charged with a small proportion of some neutral salt, and that it would be readily absorbed by plants when immersed in it. As they naturally bleed when cut, I considered, by the application of another neutral salt, dissolved in water, to the separated part, that a visible precipitate would take place upon it. Innumerable experiments have I made with solutions of most of the metallic and alkaline salts, but none succeeded so much to my satisfaction as a solution of the prussiate of potash, 200 grains, dissolved in 16 oz. of water, or as much as a common wine-bottle contains. This fluid is readily absorbed by woody plants, as the flowering, fruit, and forest trees; and also by annual, biennial, and triennial plants and bulbs: such plants absorb the solution, either by their parts detached, or *by their roots when cut*. They are to be placed in it, about half an inch deep, for 6, 12, 24, or 36 hours, in proportion to the length and the capacity of their vessels. A vine, for instance of 6 ft. long, will absorb the solution in 8 hours in a hot day, while the white lily, cut off a little above the bulb, requires 36 hours for the absorption of the fluid into its summit and petals. Plants so treated, when cut through, either transversely or longitudinally, will bleed, and the sap or exuding liquid will be impregnated with the prussiate of potash. If a strong solution of the sulphate of iron be applied to the wound it will form upon it a semi-globule, wherein will be seen, with a moderate magnifying glass, various blue specks, each of which is a precipitate, formed by the union of the prussic acid with the iron. Although I have found these two tests generally useful, I have recourse to others, as will be shown, for particular purposes.

The above statement may be easily proved by cutting off a shoot of a vine, of one year's growth, and placing its lower end in a solution of the above-described prussiate of potash, for a few hours: less time will be required if the shoot be exposed in the sun. On cutting through any of the collets, and applying to the separated parts the sulphate of iron, the ends of the ascending sap-vessels of the alburnum (similar to the

drawing *fig. 3.*, at *b c d e*) will be seen precipitating into the latter solution sundry beautiful distinct blue specks. This precipitate or blue colour arises from the union of the prussiate of potash, which had ascended from the cup by those vessels, and now discharges itself into the sulphate of iron. You may easily see the difference of the two precipitates: that of the liber will be black, from the causes already mentioned, whilst that on the vessels of the alburnum will be a deep blue. Again, with a sharp clean knife, cut a collet in a longitudinal direction; then apply the sulphate of iron, and immediately will be seen the blue precipitate in the same sort of vessels, but of considerable length; and by carefully cutting the alburnum lengthwise, they may be seen an inch long, or upwards.

The continuation of these ascending vessels might be discovered in the stalk, and also in the leaf of the vine, by the blue precipitate, were it not for the gallic acid of the liber, from its black precipitate blending immediately with the Prussian blue, so that the two sets of vessels cannot be distinguished from each other. However, recourse may be had to others; either the shoot of an apple tree, which contains no gallic acid, or to some of the cabbage tribe, which I prefer, from their leaves being smooth and broad. Therefore, place some large cabbage or broccoli leaves, or even a cabbage plant run to seed cut off a little above the ground, in a cup, with the solution of the prussiate of potash, for 36 hours. On cutting their stalks across, or any part of their leaves, in any direction, and applying the sulphate of iron, the ascending sap-vessels, by the blue precipitate, will be immediately seen in them. Afterwards, it may be a satisfaction to apply the sulphate of iron to some leaves that have not been prepared with the solution of the prussiate of potash; but no precipitate will be discovered, thus showing the absence of gallic acid. If some of the cabbages, &c., be left three or four days in the solution, the vessels of the cellular texture will be seen most beautifully, when cut through, by applying to them the sulphate of iron. If one experiment be more gratifying than another, it is seeing the ramification of those minute vessels, not only conspicuously in the stem, the stalk, and the leaf, but more so in the medulla.

I think it is very evident (reasoning by analogy) that, had it not been for the precipitate formed by the gallic acid, the ascent of the prussiate of potash would have been traced in the ascending vessels of the stalks, and also in the leaves, of the vine. The ascending vessels may be clearly seen, by the above process, in the flower of the white lily, and also in the fruits of the peach, pear, and apple, provided they are left on the branches; but not so well in the currant, raspberry, or straw-

berry, owing to their cellular and horizontal vessels, as well as their liber containing an abundance of gallic acid, which would cause the precipitates, as before mentioned, to blend together.

Some of the ascending sap-vessels of the vine are remarkably large : an individual one might be traced from near the point of a root to within a short distance of the claw, as I shall term it (for the six together resemble the claws of a bird, and the idea is strengthened by the stalk of the leaf resembling its leg); see *fig. 2.* at *e f g h i k*, which represent the six claws, and the stalk or leg at *m*. These vessels become much smaller near the claw; and, on entering it, they are extremely fine, so that the finest hair cannot be passed down them, but which might have been easily done to any other except those six.

On looking at the alburnum, one would suppose the ascending sap-vessels in drawing *fig. 4.*, from *q* to *r*, marked *h h*, and in *fig. 3.*, *b c d e*, were formed merely by leaving small circular holes during its growth; but on minutely examining them with a powerful microscope, it will be discovered that each hole contains a vessel within, of a remarkably fine, silvery, paper-like texture, which possesses the power of protruding the sap forward, as will be more fully illustrated hereafter.

I am well aware of the interesting theory of the vital motion, &c. &c., by Monsieur Dutrochet, mentioned in Vol. III. p. 78., and more fully in No. I. of *The Foreign Quarterly Review*, p. 78.; but I consider that every vegetable action arises from a vital principle inherent in itself, and not from the attraction of heavy fluids, even when confined in a membrane or sac, for others of lighter specific gravities, which that gentleman calls endosmose; and exosmose when lighter fluids pass outwards through such membrane or sac into heavy fluids; but that this vessel, or lining of the alburnum, possesses an animated power to protrude the sap forward. The following experiment will more clearly exemplify my meaning: — Cut off an inch or two from the middle of a collet of a vine, and, after making both ends very smooth with a sharp clean knife, moisten the upper end *a very little* with the solution of the sulphate of iron; afterwards, put a few drops of the prussiate of potash on the concave side of a watch-glass, and then place therein the other end of the collet; in a few minutes the upper end will become spotted with blue, from the prussiate of potash having ascended up those vessels and precipitated the sulphate of iron on the upper surface. Now, as no leaves, joints, roots of the vine were attached to the collet, nothing but its own vital principle could have raised the solution. Some think the union of the divisions by lateral pressure might induce the ascent: this is easily proved to be incorrect; for

reducing their number to three or four, or even one division, the same result will ensue.

I beg to observe that no part of the substance of the actual concentric layer (see *fig. 4.* at *g g*, and *fig. 3.* at *n n.*) is continued into the stalks or leaves; had the ligneous fibres of the concentric layer extended into them, it would have caused the stalks and leaves to have permanently remained upon the trees, after they had performed their summer's office, and appeared an unsightly incumbrance of dry materials; but the whole being of a perishable nature, they drop off as soon as their vital principle ceases to act. What a remarkable instance is this of Nature preserving the beauty of her works, as well as of a further provision that their decomposition or decay should become the future food of plants! We have frequent instances of this fact, by the luxuriant growth of trees in many woods, where the herbage that surrounds such woods, growing on the same kind of soil, is scarcely sufficient to feed a few sheep.

The *Liber* I shall now partially describe; it is the inward substance of the bark, and joins the alburnum. In a large, healthy, summer shoot of the vine, it will be found to be about one tenth of an inch thick; but, in order to examine it minutely, a very thin slice should be cut from a collet by the little regulating machine, as mentioned before, and moistened with the solution of the sulphate of iron; then, with the assistance of two powerful magnifying glasses connected together, the liber will be distinctly seen; and, upon an attentive examination, it will be found to consist of two bars of ligneous vessels (*fig. 4.* *e e*) lying between three bars of other vessels (*d d d*), which latter appear in their early state to be somewhat of a fleshy elastic substance, but in their more matured state, they become woody, and are nearly hexagonal-shaped vessels. They are only acted upon by the sulphate of iron, from their containing gallic acid, so that the two substances in the liber may be easily distinguished from each other by the black precipitate upon the fleshy vessels *d d d*, when none will be seen on the ligneous vessels *e e*.

Fig. 3. represents part of the perpendicular vessels of a division, cut down the middle; *f f f f* are those of the liber, consisting of the three dark and two white lines, similar to those on a larger scale in *fig. 4.* *d d d d*, and *e e*. The liber is invariably placed on the outside of the alburnum, whether in the root, stem, or branch of the vine; but, in the claw, stalk, and leaf, it covers only the ascending sap and spiral vessels. It is the principal agent in forming the alburnum, which will be shown when I explain its gradual growth or increase.

So far my remarks have been directed nearly exclusively to the vessels of a division, to simplify the description of those of a collet; and the vessels have been traced from the collet to the commencement of the claw, as in *fig. 3. z*, where they are supposed to have extended themselves to the outside of the shoot beyond the other divisions of *i k l m*.

I will now endeavour to describe the beautiful simplicity by which Nature arranges the union of the continued vessels of six of these divisions to form the stalk and leaf. *Fig. 2.* represents their outward appearance at *e f g h i k*, where they form the base of the footstalk of a leaf; and we will further suppose *e* to have extended itself in a horizontal direction from the place at *z fig. 3.* toward *x* in *fig 2.* As the vessels of one division would not have been sufficient of themselves to form an entire leaf, nor could one set have been placed sufficiently firm on the outside of the joint, those of another division extend themselves in like manner from the opposite side of the joint from *k* toward *x* as in *fig. 2.*; these are further added to and strengthened by two others, acting also as clasps, as at *f i*, and the centre of the base is firmly secured by two more immediately underneath, which give strength to the other four claws, and give also an additional number of vessels at *g h*. The vessels of the six divisions, when thus united, form the footstalk of the leaf, and, by their further continuation from thence, produce the stalk, as well as the leaf. It is difficult in a drawing like *fig. 2.* to convey an accurate idea, that the base of the footstalk of the leaf has no support or connection, but from the vessels of the six divisions. On the left hand side of the drawing, a vascular bundle is divested of its cuticle and cellular texture, to show that it runs directly underneath the claw of *e*, from the bottom to the top; and, on the opposite side, I have represented a spear-pointed knife underneath the two claws *i k*. Such an operation on the plant would have only cut through its cuticle, but not the perpendicular vessels of the shoot underneath the knife, which are independent of the claws, as much so, as if no part of them had been covered by the claws.

In *fig. 2.* the outside clasping claws of *e* and *k* appear as if they arose from the collet exactly across the centre; but they commence considerably behind, that they may possess more power to hold the base of the stalk of the leaf. In some leaves that have no stalk, but arise immediately from the joint, the claws do not require such extra means to hold them. For where the stalk is very thick and heavy, and the leaves extremely large, as those on the stem of the garden rhubarb (*Rhèum rhapónticum*) gone to seed, their claws nearly to

each other at the back of the joint. The vessels which compose them proceed from upwards of twenty divisions; they form a circle just within the edge of the stem, and within that circle another is formed belonging to the next leaf above, and within the second are those of the third, &c. Every person interested in this subject I would recommend to examine one of the rhubarb stalks under such circumstances.

That the bundles of the vascular texture of *fig. 2.*, which lie on the outside of the six divisions, and commence at *n o p q r s*, and join their respective claws above, may be easily distinguished, their cuticle and cellular texture are in *fig. 2.* removed from them, as well as from the others below the joint, that their general arrangement so far might be seen at one view.

I wish now to draw your attention particularly to those six sets of vessels of the claws *e f g h i k*, *fig. 2.*, which are a continuation from the six divisions of the collets to the base of the stalk of the leaf. The first layer consists of the cuticle; the second of the cellular texture; the third of the vascular texture, similar to *fig. 3.* at *g g* above *z*; the fourth of the liber at *f f* above *z*; the fifth of the ascending sap-vessels of *b c d e* above *z*; and the sixth of the spiral vessels at *a* above *z*; so that we see by this admirable arrangement the special protection given to *the spiral vessels*: for they are those which convey the secreted juice from the matured liber to the young extending shoot, previously to the formation of the ascending sap-vessels of the alburnum. The vessels of the medulla are not continued in so distinct a manner as the others, they are formed in the stalk and leaf from the cellular texture of the second layer. No part of the ligneous fibres of the concentric layer of the collet enters into them, for the reasons already given. As the whole of those vessels of the claws are so peculiarly interesting, I shall exhibit them in a future drawing, with further particulars respecting them.

I have been rather short in my description of the liber, considering its great importance to the plant, because the vessels of the vascular texture, which are in bundles, are much more conspicuous, and these two always act in unison together. Some writers^h have called the whole of the bark the *descending vessels*; but I consider only those of the liber and the cellular texture to be permanently so in the vine, as I hope fully to explain when I describe the second year's growth of the shoot of *fig. 1.*

I flatter myself the ascending sap has been satisfactorily shown to pass up the vessels of the alburnum into the leaf, but no proof has yet been given that it proceeds any farther. To prove it, I shall avail myself of the gallic acid, which exists in

the liber of the leaf; this fluid may be easily precipitated by simply placing, in the autumn (previously the vessels are so small that they are choaked up by the precipitate), a shoot of the vine, in a weak solution of the sulphate of iron and, upon standing therein for some time, the thin parts of the leaves will become black, as soon as the union takes place between the ascending sulphate of iron, and the gallic acid of the leaf; it will afterwards descend down the vessels of the liber of the stalk of the leaf, and sometimes down to the liber of the collet, which will in like manner become black: but the ascending vessels of the alburnum of the shoot will not be discoloured, nor the ascending vessels of the stalk of the leaf, because the solution has not met with any gallic acid in its ascent through those vessels.

It is highly gratifying, in our examination of the economy of Nature, to have her assistance in such operation; for no artificial means could have been used to pass a solution into the above minute vessels had they been void of actual life.

By the assistance of these chemical tests, I flatter myself the investigation of the anatomy of vegetation will be facilitated, and I sincerely hope others will prosecute it with greater perseverance; by so doing they will convince themselves how sublimely Nature carries on her grand operations, by a repetition of parts, and those united by the most simple means, as well as by a continuation of those parts subdivided. Although we shall never discover the hidden springs by which she creates, animates, and elongates the living vegetable fibres; yet, by their aid, many interesting facts may be discovered relative to the larger vessels. I have many apologies to make for occupying your time, even in the perusal of this long letter; and I am fearful, also, in addition to the reasons already given of the number of drawings, that the length of my remarks will exclude both from your valuable and instructive Magazine; but this I must leave entirely for your liberality and consideration.

I remain, Sir, &c.

Bath, June 12.

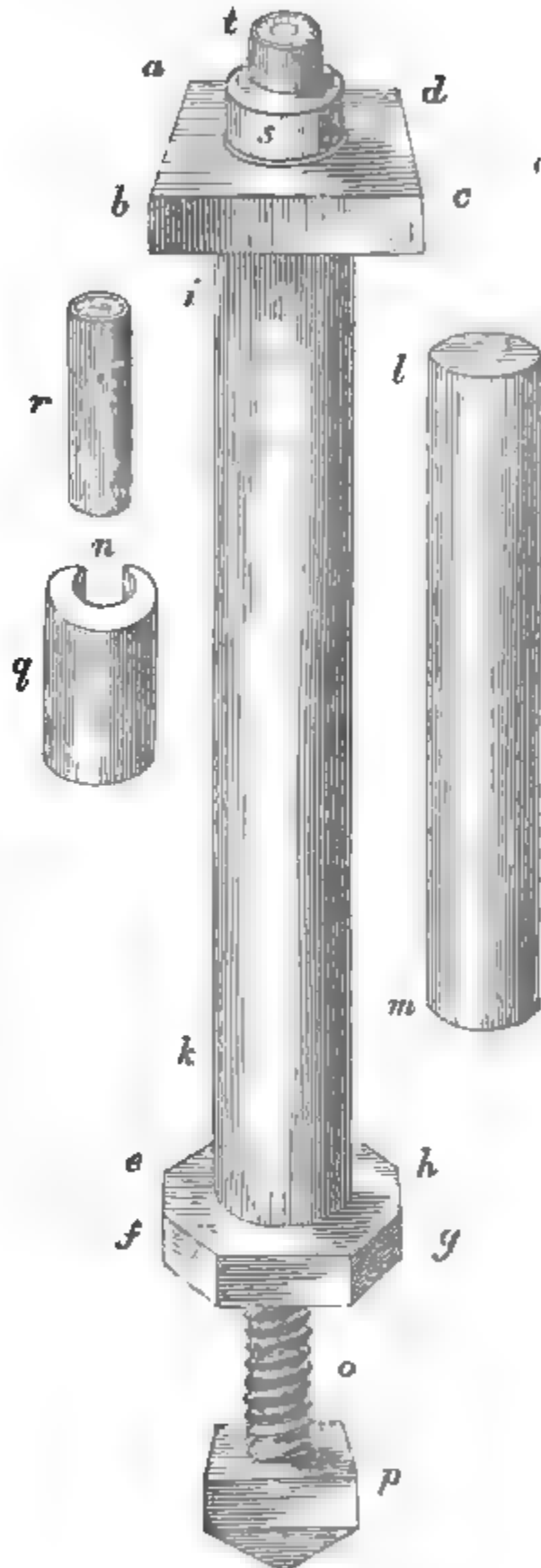
WALTER WILLIAM CAPPER.

The common copperas, or sulphate of iron, becomes a stronger test by the following method: —

Dry down before the fire, on a plate, 8 oz. of the common copperas of the shops. Reduce it to a fine powder, then weigh 100 grs. of it, which place in a mortar, and add to it 10 drops of nitric acid, mix them well together, afterwards add 4 oz of water, and filter it. This liquor should be kept close stopped.

The following is a description of the little regulating machine (*fig. 6.*), by which thin slices may be cut from the collet, &c.

- a b c d*, The top 1 in. square, and a quarter thick.
e f g h, Another of the same size and thickness, but of an octagon shape,
i k, A cylinder 4 in. long, which connects the above two together, leaving a round hole at the top, of half an inch wide.
l m, A movable core 2½ inches long, covered top and bottom; it is to be put into *i k*.
n, The screw about 1½ in. long or more.
p, A square knob fastened to the screw *n*.
q, A cork with a circular hole on one side.
r, A collet of a vine, a little longer than the cork *q*, and to be placed within it.
s t are the same as *q r*, but now supposed to be placed in the hole of *a b c d*. They are to be pushed down, leaving *t* a little above the surface, which is to be cut off with a flat-bladed razor. Then carefully turn the screw an eighth round, which will raise the collet sufficiently to enable you with the razor to take off a thin slice.



The whole is made of brass. This machine I invented, but Mr. Cary in the Strand, London, will make others, as he has seen mine, and I shall be obliged to any person for any improvement upon it.

W. W. C.

ART. III. *Notes on the former and present State of Horticulture in Ireland.* By Mr. JOHN ROBERTSON, F.H.S.

Sir,

I SEND you the following memoranda, partly taken from an article entitled "Dubliniana" in the *Pilot* newspaper of November 9., and partly my own remarks on the memoranda, and on the former and present state of horticulture in this country.

"*The Use of Sea-kale as an esculent Vegetable* is supposed to be of recent date, and was first introduced, as has been said, by the present Bishop of Carlisle, who cultivated it in his garden for asparagus; but, so long ago as the year 1764, this plant was cultivated in the gardens of Dublin, and the seeds sold in the shops. When the seeds were sown, they were covered over with gravel; the shoots were used in spring, as they are now, and preferred to any other species of kale. It was the practice, however, to boil them in two different waters, to extract the salt, with which the plant was supposed to be impregnated, from its marine origin. The valuable property, also, which distinguishes it from other kales, that the root is perennial, and will bear cutting for forty years, was well known. (*Tutty*, vol. i. p. 4.) The sea-kale grows at present, in great abundance, on every part of the sandy shores around the bay of Dublin, and is cultivated in every garden in and near the city.

"*Pine-apples* were first brought to Dublin by a man of the name of Buller, who, in the reign of Queen Anne, settled in the vicinity of Dublin, and held an extensive nursery in New Street, where traces remain of it to this day.

"In the reign of George I., the Hugonots established a Florists' Club, for the purpose of promoting the cultivation of flowers, and held their meetings at the Rose tavern, Drumcondra. They were continued until the reign of George II.; but the science of gardening was, from that time, entirely neglected, until a number of the principal gardeners, in the vicinity of Dublin, assembled at the Rose tavern, Drumcondra, on Sept. 30. 1816, and formed themselves into a Horticultural Society."

The writer must have been misinformed when he says that pine-apples were introduced to Dublin in the reign of Queen Anne. They were only cultivated in *England* late in the reign, for the first time. If introduced first to Dublin by Buller, it should have been the reign of George II.: there were but two nurserymen of that name there in succession. I recollect having seen the younger Buller myself, at his shop in Pill Lane, about the year 1776. The elder was

business about 1756, as my father purchased from him, then, a stock of pine plants, perfectly clean and free from insects: and it may be worth remarking, as rather a rare instance of any such pedigree, and so remote, that from that stock has descended to me the one which I am at present in possession of equally free from insects, and that solely by guarding against their intermixture with any other: perhaps the only effectual way of preserving pine plants clean, notwithstanding all the nostrums that have been recommended.

However horticulture may have been neglected about Dublin at the period mentioned by the writer, it is not to be taken for granted that it was so in other parts of Ireland. Kilkenny, at least, forms an exception, as it never was so flourishing there as then.

Drawing a radius of ten or twelve miles round that city, you would, to my knowledge, for twenty or thirty years from 1785, reckon within the circle a dozen gardens or more, each of which contained pine-stoves, from 50 to 100 ft. in length; and other forcing-houses corresponding*, well stocked and managed by able gardeners from Kew, Hampton Court, and other places of note round London. Now we cannot count half the number: the Union has rendered some of our great landed proprietors absentees; and the fall of lands and prices has disabled others, and has swept off a number of landholders, who were rapidly improving the face of the country by building, farming, planting, and gardening: so that horticulture in Ireland, as far as my observation extends, was never at so low an ebb as at the present moment.

I am, Sir, &c.

Kilkenny, Nov. 1829.

JOHN ROBERTSON.

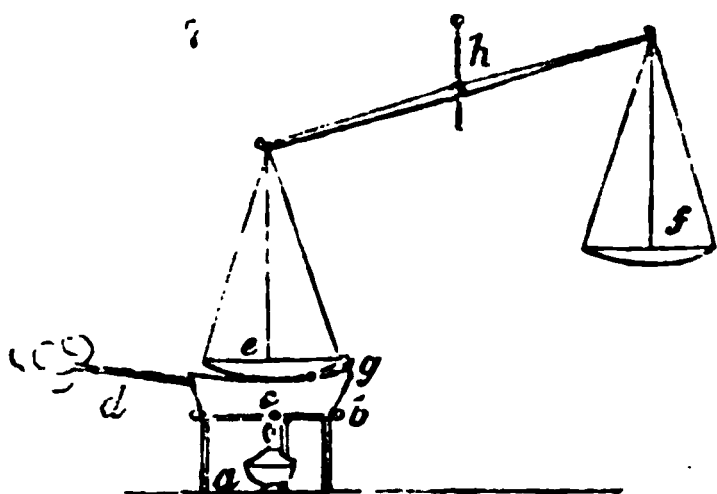
ART. IV. *Outlines of Horticultural Chemistry: — Diseases of Plants.* By G. W. JOHNSON, Esq., Great Totham, Essex.

(Continued from Vol. V. p. 409.)

THE following sketch (*fig. 7.*) represents the apparatus I have found the best for ascertaining the retentive power of soils. *a* represents a small lamp; *b*, a tripod for supporting a small tin

* As an instance, fifty years ago the present Dowager Countess of Ormond had her table regularly served, through the winter with cucumbers raised in her pine-stoves on treillages against the back wall; though, only the other day, Mr. Aiton, the king's gardener at Kew, had a medal presented to him by the Horticultural Society, for the introduction of the practice about London.

vessel *c*, which has a small hole and plug at *g*, for the purpose of filling it with water; and a small pipe *d*, for the escape of the steam when the water is brought to a boiling temperature; *h* is a small pair of grain scales. To ascertain the moisture retentive power of a soil, put 10 grains of it, previously dried by exposure to a temperature of 212° (the boiling point of water), for half an hour, by having it laid upon *c*, whilst the water within it is kept boiling for that period. On the 10 grs. of previously dried soil put, by means of a small quill, three drops of clean water; ascertain the exact weight of these, usually 4 grains; then suspend the beam, so that the pan of the scales containing the soil may rest upon *c*, as represented in the sketch, the weight of the water having previously been removed from the other scale-pan *f*. The water in *c* must be kept boiling, and the exact number of minutes noted that is required to evaporate the added moisture, so as to return the beam into equilibrium. It was by means of this apparatus that I obtained the comparative results detailed in a former volume. I have always found those soils proportionably unproductive, the first from containing too much alumina, and the second from a redundancy of silica, as they required more than 50 minutes, and less than 25 minutes, to deprive them of half their weight of moisture.



I shall now proceed to consider some of the diseases of plants, whose ravages affect the horticulturist, and on which science may afford some light. Plants being organised bodies, whose parts, in the common course of nature, are subject to waste and decay, the functions of these are consequently liable to disarrangement, and such disarrangement constitutes disease. Such morbid affections are not, however, always the consequences of old age: they are often caused by matters being absorbed from the soil which are inimical to the constitution of the plant; from a want of those that are beneficial, as well as from their excess; from violent and sudden transitions of temperature; from wounds, and from the attacks of vermin. “Animals,” said the late Dr. Good, “are liable, as we all know, to a great variety of diseases; so, too, are vegetables, to diseases as numerous, as varied, and as fatal; to diseases epidemic, endemic, sporadic; to scabies, pernio, ulcers, gangrene; to polysarcia, atrophy, and involution. Wh

ever, in fine, be the system of nosology to which we are attached, it is impossible for us to put our hand upon any one class or order of diseases which they describe, without putting our hand, at the same time, upon some disease to which plants are subject in common with animals."

In previous communications upon the food and climate of plants, I have made a general statement of what may be termed their *dietetics*, in a treatise on vegetable pathology; and, as a due attention to those points is the best prevention of their diseases, I shall confine myself from any general remarks on that point, and to the specific diagnosis, prognosis, and treatment of such disorders as I may mention.

Canker, Ulcer. These are synonyms of the same disease, which is accompanied with different symptoms, according to the species of tree in which it occurs; being known as the canker in those whose true sap contains a more than usual proportion of acid; and as ulcer in those containing tannin, or other astringent principle. In both it is an ulcerous affection.

The symptoms vary in the genus *Pyrus*, and others whose sap contains a free acid. It is seldom, if ever, accompanied by a discharge; but the parts affected enlarge, their wood becomes brown and carious, and the bark covering them cracks, gapes, and manifests a disposition to separate from the wood. In the genera *Ulmus*, *Quercus*, and others abounding in astringent matters, a copious discharge usually accompanies all the preceding symptoms, which are always present also, with the exception of the swelling of the parts, which only occasionally occurs. The discharged liquid is occasionally transparent; but generally a reddish brown, becoming nearly black by exposure to the air. The sides of the ulcer, in the first instance, are usually covered with a white, crystalline, incrustation; in the second, with a shining, varnish-like coat. In the genus *Prunus*, and others abounding with gum, the same symptoms are exhibited, except that swelling still more rarely occurs, and that the discharged matter is nearly pure gum, a variation which seems to remove it to another class of diseases. In every instance, I am prepared to maintain that the disease is local; that is, it at first arises from a disarrangement in the functions of the affected part, and is never brought on from a general diseased state of the tree; but is occasioned by contingencies perfectly independent of soil and situation. When the disease has commenced, if these are unfavourable, they may aggravate the symptoms, and promote their diffusion, but they are not the originators of the disease.

It appears to me, in general, to arise from contused wounds, however they may be inflicted; by the bruise occasioned by

a blow, or the erosion by a ladder, or the contact of the branches. The wounds in such cases, as in the animal frame, are long in healing; the extravasated sap and contused vessels speedily decompose: and how this spreads by contact, in organised bodies, is too well known to need to be here insisted upon. The complete removal of the affected part by a knife, and then covering the wound by a plaster to exclude air, is the best remedy; and if, from long neglect, it has been allowed to spread itself from branch to branch, until the whole tree has become infected, remedies are then of no avail, and the tree had better be removed.

The chemical phenomena of the disease appear to be a complete decomposition of the vegetable fibre, which passes in the form of carbonic acid and carburetted hydrogen gas whilst the friable matter which remains behind consists of some foreign vegetable principle, the result of decomposition, and an excess of saline and alkaline matters.

Vauquelin analysed the sanious discharge from an elm, and found in it nearly 40 per cent of alkaline and saline constituents, which is about three times as much as the sap contains when in a healthy state, if compared with the amount of vegetable constituents. Then, again, the saline matter in the sap of the elm consists chiefly of acetate of potash and carbonate of lime: those in the sanious discharge, of carbonate of potash and carbonate of lime. Decomposition has here, therefore, been effected as well as in the carbonaceous matter of the tree: a decomposition, too, aggravating the disease; woody matter, macerated for some time in a solution of carbonate of potash, is decomposed and converted into ulmin and that this effect is produced in the progress of the disease was demonstrated by Vauquelin, who found that the brown matter discharged by the elm consisted of ulmin and carbonate of potash.

Sir Humphry Davy detected carbonate of lime on the edges of the cankered parts of apple trees. The above facts demonstrate that an excess of alkaline matters occurs in vegetable ulcerations; and, guided by this, the last-named chemist commended diluted acids to be applied to the wounds, and even poured about the roots, in case the tree is of sufficient value. The topical application would doubtless check the corrosion of the ulcer; but it admits of doubt whether the ministering an acid to the roots would be of benefit, unless it were one that is not with facility decomposed, as the sulphuric or muriatic: for, previously to arriving at the wound, it would have to be elaborated in an organ in which no vegetable acids, the acetic or tartaric, would pass through unchanged.

atic acid I should recommend to be employed ; for, even if decomposed, the results would be compounds that may be applied to ulcerous affections with advantage. To the wound it should be applied, after being mixed with twice its bulk of water ; and to the roots, after an ounce has been mixed with a gallon of water : applied twice a week.

It must not be neglected to be observed, that if old trees become affected with this disease, there is little chance of preserving them ; for the sap of old trees always contains less of vegetable, and more of saline, matter, than when they are young and vigorous, consequently they are more prone to the disease.

“ The old age of a tree,” says Davy, “ in this respect, is faintly analogous to the old age of animals, in which the secretions of bony matter are always in excess, and the tendency to ossification great.”

It is a very mistaken idea of some gardeners, that trees affected with canker are benefited by having the earth removed from around their roots, and the space refilled with sand : on the contrary, if the old soil is removed, it should be replaced by that which is fresh and fertile ; at all events, a little well putrefied dung should be pointed in round the the stem, and the surface kept covered with mulch during the summer, to prevent them being injured by drought. In short, every thing should be done to keep them in vigour.

(*To be continued.*)

ART. V. *Remarks on the English Taste and Practice in Landscape-Gardening, as compared with the Taste of the Germans, with a Plan and Description of the Gardens of Prince Metternich at Johannisberg on the Rhine.* By M. JACOB RINZ, Jun.

Sir,

I THINK the English taste in landscape-gardening inferior to that now rapidly spreading through Germany. In every part of the world there are more bad works than good ; but in England, where no expense is spared, I should have expected better productions in the way of landscape-gardening. It seems that the taste is by no means improving in this country, but rather remains in its first or old principles, while we in Germany endeavour to improve on them. My opinion is, that you commit a great fault in dividing the park from the pleasure-ground, and the pleasure-ground from the flower-garden. Not to introduce shrubs and flowers in the park is unnatural, because where they are produced in great variety

it characterises a fine country. Elms, oaks, and pines, &c., would produce a much finer effect, if tastefully combined with the various handsome trees, shrubs, and flowers, which we possess. I also think that you have too many walks and other things in the pleasure-ground, and too few in the park. I should think that if your grounds were laid out on a proper system, no other country could possibly vie with them. I am sure that the practice of combining the park, pleasure-ground, and flower-garden, as in the little plan of Johannisberg herewith sent (*fig. 8.*), would not be more expensive or troublesome to execute, and would be much superior in point of effect. Though the finest shrubs and flower masses should be placed near the mansion, they must be disposed naturally; nor should there be game confined in aviaries, which is inconsistent with the ideas of nature and freedom which ought to prevail in English gardens.

Respecting flower masses, they should correspond and unite with the masses of shrubs, as shown by the dots in the sketch; and they should be arranged in such a manner that the mass may be in flower at least twice a year. In the public gardens of Francfort, we frequently change a whole plot of grass into mignonette or *Delphinium Ajacis*, &c. A mass of *Dianthus viscosus* intermixed with *Hesperis matronalis* presents a beautiful appearance; and one of the finest flower masses which I ever saw was one with *Amaranthus tricolor* placed behind, and the cockscomb amaranthus placed before, both a little mixed with *Lobelia Erinus*. Thus a constant succession may be had all through the year.

Much more might be said on this subject; but I hope that in your next tour on the Continent you will visit a place called Schoenbusch, 25 miles from Francfort, which was formerly a forest, but within the last fifty years has been changed into a park. In former times it was a favourite spot of the present king of Bavaria, but it is now somewhat neglected. The disposition of the trees and shrubs is executed so superiorly, that it is a masterpiece for Germany and England.

The pleasure-ground of Johannisberg (*fig. 8.*) was laid out by my father for Prince Metternich, in 1825; and from its delightful situation near the Rhine, it will in a few years be one of the finest places in Germany.

a, A projected temple on an elevated site, which is planted with various trees, as *Pinus*, *Bétula*, *Juniperus*, &c.

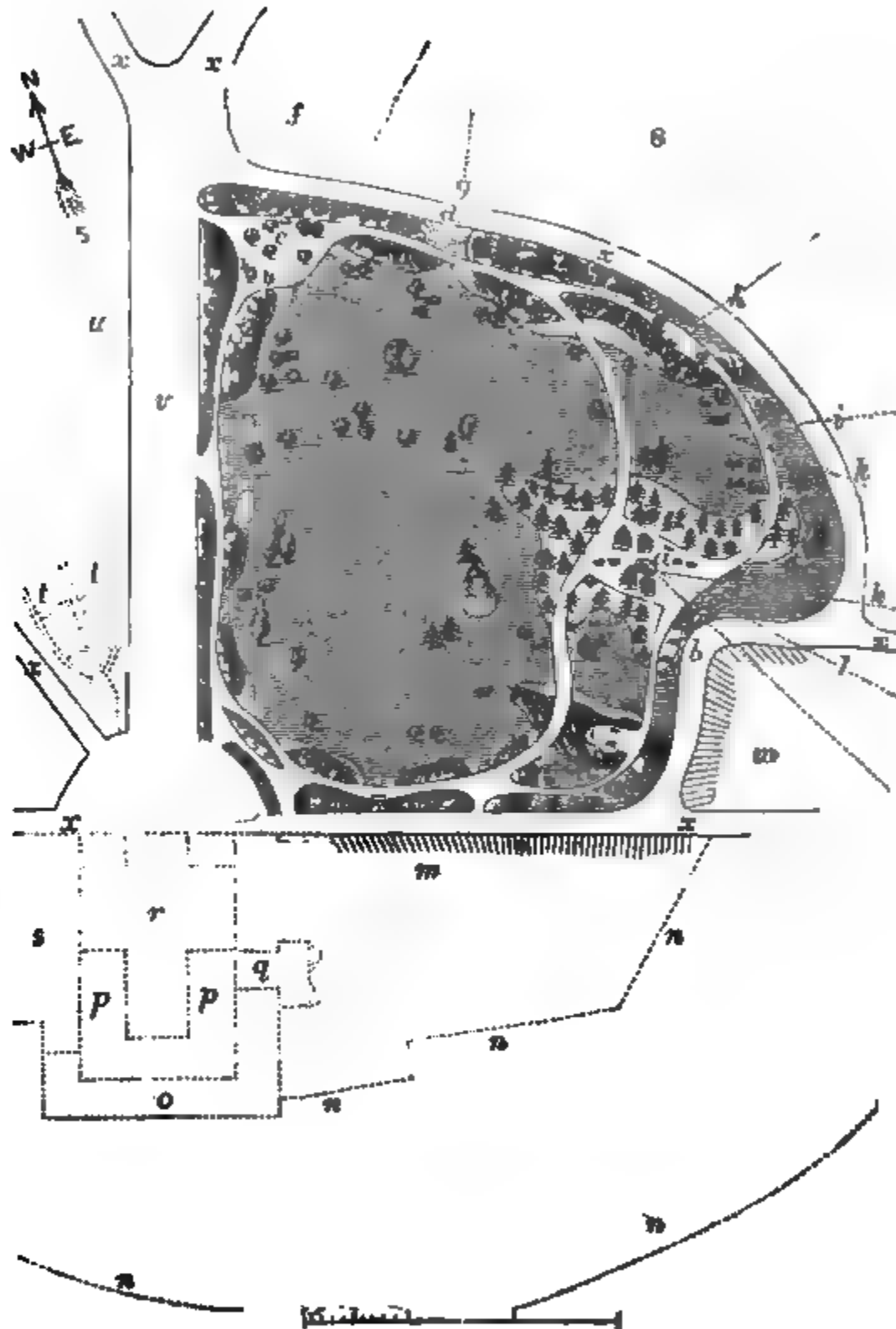
b, Group of *Pinus canadensis*.

c, Group of *Pinus Stròbus*.

d, All the dotted parts are flower masses.

e, Elevated site planted with *Platanus orientalis*. Some cedars of Lebanon are also planted there, and besides that the garden is very rich in most kinds of American and other fine shrubs and rare trees.

- f*, An orchard of the best esculent varieties of *Fagus Castanea*.
g, View towards the mountains and the forest.
h, Meadows, over which are seen the mountains and the forest.
s, View to the vineyards.



- k k*, View to the vineyards on the Rhine.
l, View to the vineyards, to the Rhine, and for about twenty-four miles in the country.
m m, Vineyards.
n n n, Terrace walls for vines.
o, Flower-garden round the palace.
p p, Palace.
q, Chapel.
r, Court of the palace.
s, Farm-yard.
t t, Kitchen-garden.
u, Orchard.
v v v, Double avenue.
x x x, Public roads.

It is to be regretted that the palace is not nearer the garden; however, its effect amidst the vineyards is wonderful, and the views in the various meadows are so exceedingly fine, that it may be called the heaven of Germany.

I give you my best thanks for your goodness, in recommending me to all gardeners in my tour in England, to whom I am sincerely obliged for the kind reception which I every where met with. I remain, Sir, &c.

Ball's Pond, May 14. 1829.

JACOB RINZ.

ART. VI. *Design and Description of a Gardener's House built in the Gardens at Worksop Manor, the Seat of the Right Honourable the Earl of Surrey, with some Remarks on these Gardens.*
By ROBERT ABRAHAM, Esq., Architect.

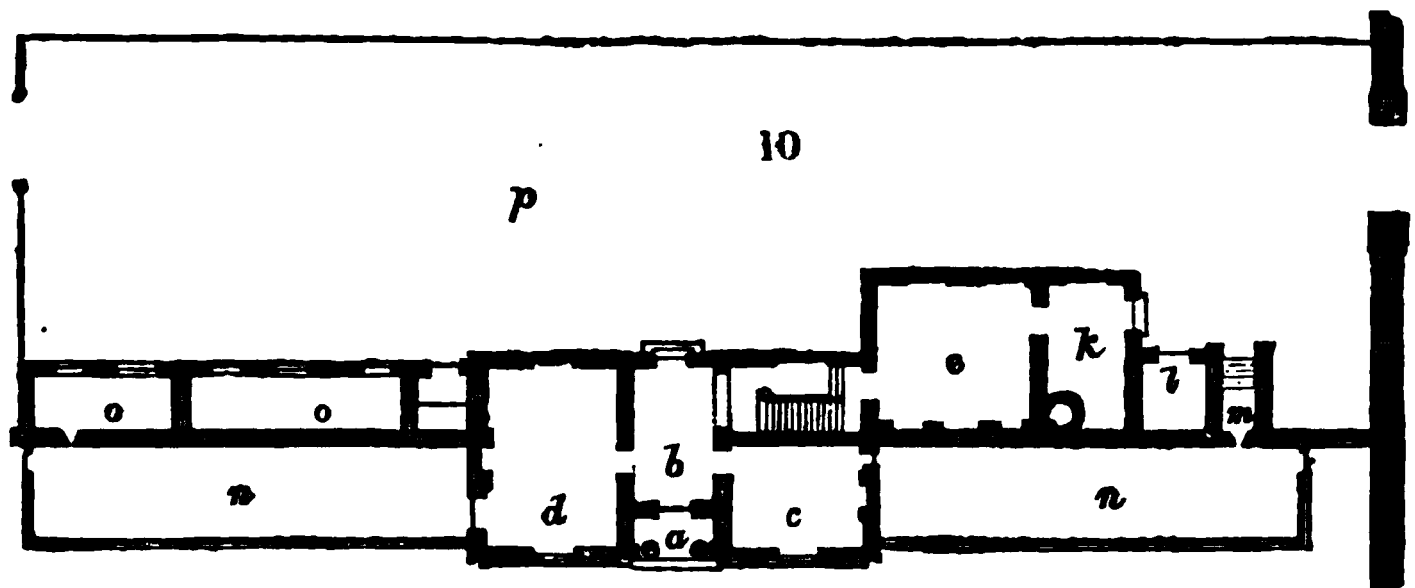
Dear Sir,

HAVING been repeatedly solicited by some of your horticultural friends to send you a sketch of the gardener's cottage, erected from my designs, in the garden of the Earl of Surrey, at Worksop Manor, I have now determined to do so. As this cottage is allowed to be one of the most convenient and elegant of its kind (*fig. 9.*), and has excited the admiration of the company who have visited that place, perhaps a sketch of it inserted in the Magazine may be of some interest to your readers.



In rearing such respectable habitations for the comfort & meritorious servants, the Earl of Surrey is not only deserving present encomiums, but he will be likewise entitled to the gratitude of posterity, because his example may influence the benevolence of others, and thus secure comfort from family to family through successive generations. This cottage comprises a lobby, an entrance-hall, a sitting-room, an office, a kitchen, a wash-house, and three bed-rooms, besides several other useful appendages. It is placed at the north extremity of the garden, partly within and partly without the boundary wall, and so situated that the gardener's office (*fig. 10. e*), will have a command of the principal entrance. There is also a back approach and yard by which all persons connected with the house can pass

served. An arrangement, in my opinion, particularly necessary, as no individual of the family but the superintendant himself will be seen within the enclosed area. This completely obviates the inconvenience which induces many gentlemen to prefer single to married men.



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|--------------------------|-------------------------------|----------------------------|
| a, Lobby. | e, Kitchen. | n n, Conservatories. |
| b, Entrance passage. | k, Wash-house | o o, Stores and tool-room. |
| c, Office, or book-room. | l, Wood-house. | p, Yard. |
| d, Sitting-room. | m, Stockhole to conservatory. | |

The garden at this place, in the time of the late Duke of Norfolk, was suffered to go to decay; but is now celebrated for its fine forcing-houses, which have lately been reconstructed and fitted up in a most superior manner. To procure fruit in perfection in these houses is now evidently reduced to a mechanical certainty. Besides the improved state of the houses, the whole place has been remodelled. The fruit walls have been new stocked with the modern and most approved varieties of fruits; these trees have now filled their spaces, and, from the scientific manner in which they have been pruned and trained, are as handsome specimens as the most refined gardener or amateur could possibly wish to see. From the systematic arrangement of the kitchen-garden crops, the neat state of the walks and flower-borders, and the uniform appearance of the whole place, this may be classed amongst the best-conducted gardens in the kingdom; and in this opinion I am supported by the concurrence of many others, amongst whom are some of the most distinguished members of the Horticultural Society of London.

In perfecting such establishments as these, much must depend at all times on the taste and spirit of the proprietor. When I last visited Worksop Manor, Mr. Acon assured me that Lord Surrey, on entering any garden, could immediately distinguish between the scientific and mere practical man. To such discernment may be attributed the improved state of his own residence. I am, dear Sir, &c.

ROBERT ABRAHAM.

Torrington Street, Russel Square, April, 1829.

ART. VII. *On a System of pruning, or rather on a Preventive System of pruning, Forest Trees.* By Mr. W. BILLINGTON, M.C.H.S., Author of *Facts and Experiments on Oaks, &c. &c.*

Sir,

MAY I beg the favour of you to give publicity to the following observations and remarks on the most important part of arboriculture, viz. the art of pruning forest trees, or rather, what should be termed a preventive system of pruning, in your Magazine.

Having had considerable experience in the raising of young plantations of oaks for future navies, in some of the royal forests, and having often seen the ill effects of the erroneous methods generally adopted in pruning forest trees, or, what is as bad, of its too frequent neglect, I incidentally recommended the shortening or cutting in of from one third to two thirds off the extremities of the branches of some larch trees, to give *light* and room to the young oaks which were nearly destroyed by the larches and other overgrowing and shading stuff. On this account I was accused, by a superior officer, and others of *supposed* superior skill and knowledge, of having spoiled the larches by such cutting (mind, reader, when they were in full leaf), they asserting that it would bleed them to *death* at the end of the season; and when it was found that they had not bled to *death*, but had improved greatly in health and vigour, to prove me wrong, it was as confidently asserted by the same knowing ones, that it had *injured* them, by drawing the sap out of the stem into the branches. Such was the knowledge or motives of a *superior officer* and others. Not thinking it worth while to contradict such knowing ones by stating what others said or thought about it, being convinced of its absurdity, and of their motives for opposition; and although the cutting of the side branches from the stems of trees at an early age had been recommended by a writer (Pontey) who was considered good authority, as tending to increase the timber in the trunk or stem; I set to work immediately to prove by experiments whether it tended to increase or retard the growth of the stem, and soon found the wonderful advantage it gave to the trees of whatever kind, a vigour and increasing the bulk and handsomeness of the stem. I drew up a table of my experiments under the different modes that I tried, which clearly shows the superiority of this system, and the extremely injurious tendency of the other; this I published *, for the information of the public.

* Entitled *A Series of Facts, Hints, Observations, and Experiments on different Modes of raising young Plantations of Oaks for future Navies*. W. Billington, M.C.H.S., Superintendant of planting 11,000 Acres of Forest of Dean. London, 1825. [To be reviewed in our next Number.]

book, in which the process and results are amply and clearly detailed, with a view, if possible, of stopping or checking that widely extended pernicious system of divesting young trees of their side branches.

Since the publication of that work, the public attention has been considerably excited on the mode adopted for planting the royal forests, regarding which blame has attached where it ought not, but on that subject I intend to explain at a future time; and likewise upon the after-management and pruning of the *young trees*, which is, above all others, of more paramount and lasting consequence, than the mere planting of the trees by any system. Having discovered and proved it by my own experiments, I disclosed to the British public the gross error of that system of pruning, by cutting off the side branches from young trees, and the vast superiority of my system of shortening, or cutting in, the branches, whereby the number of branches are increased, and their tendency to increase in thickness greatly diminished, with the quicker increase of the stem as it respects thickness, length, regular tapering, and superior quality of the timber, as I have clearly pointed out in my publication. Yet I have seen in some later publications a good deal said about my system of pruning, and an endeavour to keep what I have found out by my own actual observations and experience, and communicated to the public, and to represent what I have said and published on that subject, as being the opinions and practice of others, who are to be brought forward by and by as the first who invented, practised, and published the system, when it is probable they might have read my book, which may have strengthened and confirmed their ideas on the subject. Thus keeping me in the background, without ever mentioning what I have said on the subject, though the system, as far as it is understood, has been much extolled. Now it is clear I was the first to publish it, and give instructions to gentlemen and others how it should be performed; but more of this at some future time.

As my ideas are now more mature and confirmed on that most important part of the art termed pruning, but which I think would be better termed a preventive from pruning, I beg to offer a few more remarks on it, hoping to call the attention of every lover of woods and planter of trees to the subject; for, without that *after-management*, they will generally find themselves sorely disappointed in various points of view. My method I shall take the liberty, in imitation of a recent writer on planting, who appears fond of introducing new terms, to call the *Billingtonian System* of pruning, training, &c., a name which has been applied to it by a great lover of trees,

planting, and rural life, who much admires and appreciates the system.

The advantages to be derived from it, if properly understood and practised, being incalculable, I will not attempt to describe them, but endeavour, in as concise and clear a manner as possible, to explain the mode by which such advantages may be derived, and refer those who wish to be more minutely informed on the subject to my work, where every process to obtain such great results are clearly detailed, and at greater length than the present paper will allow.

First, then, we must begin with the plants in the nursery at an early age, when they have made a few shoots; some of them will be stronger than others, and two often of nearly an equal size. After the shoots have grown a foot or two, more or less, according to the kind of tree and other circumstances, break out the central or terminal bud; pinch off part of the last or present year's terminal shoot, or cut it off if it is too old or tough to pinch off with the finger and thumb; the strongest horizontal side shoots must be shortened, and prevented from extending too far, by the above method; and the more upright strong shoots, that are competing with the leader, must be cut in rather shorter, to cause them to throw out more smaller branches, as the strongest and most upright shoot must always be left uncut for the leader to form the stem of the future tree. This work must be followed up through every summer while in the nursery, and after they have been planted out and begun to make vigorous shoots; for summer is the best time to do it: and twice through the summer would be much better, as some kinds of plants make too vigorous shoots in the growing season; first time about June, second time in August or September. These are the properest seasons for shortening the branches; and as it is such easy and delightful employment, and the seasons so pleasant, I do earnestly hope the fair sex will be induced to study and learn the art, when they may spend many a pleasant hour in healthful and really profitable employment, either alone, or with their spouses or brother in imitation of our first parents, when in their state of innocence in the plantations and gardens of Eden; how worthy be imitated! but I beg pardon, I am digressing from main subject.

By following up this system with the plants, from infancy, we procure numerous small branches with buds and leaves, whereby the trees are supplied with nutriment for support, and the increase of the stem; the quality of the wood is improved by the more numerous elongations from the sides of the young shoots and branches that descend longitudinally

down the stem ; for, as the branches increase, so do the roots ; and, *vice versâ*, if the branches be few and straggling, so will the roots. If there is no unnatural cause to destroy the branches, then by following up this simple easy process, from 10 to 15 or 20 years, according to circumstances, we may raise the stem of a tree to any height that may be desirable, before it is permitted to branch out in all its native beauty and wildness ; or we may dispose its future form to any use or in any way fancy or taste may dictate, as I have fully explained in my publication. At the same time, those branches that have been shortened, and prevented from being extended, or “ cut in ” (if that should be thought a more appropriate term), when young, are rendered, by that simple and easy operation, unable to acquire that degree of thickness which would injure the quality of the future timber when converted to use ; as there would be none of those great knots which are so unsightly and often injurious when timber is worked up for cabinet or other purposes. Those small branches, besides contributing so materially to the increase of the stem, roots, and quality of the timber, &c., render it more hardy, and fitter for more open and exposed situations, if it should be desirable to transplant any of them from where they may be too thick, instead of cutting them down, or, what is more likely to happen, when they become more exposed by thinning, especially where fir trees are removed. By this system, the trees acquire a strength of stem and roots in proportion to their tops, and also a hardiness to enable them to stand the cold and stormy winds.

Moreover, as they may be trained to any length of straight stems as single trees, in hedge-rows and exposed situations, by following up the system long enough, the advantages it would be of to proprietors of land, where it would not be advisable to make plantations, are incalculable, as adapted to planting in hedge-rows, with the least possible injury to the land. In the hedge-rows of arable pasture and meadow land, how desirable would it be to have fine, tall, straight, handsome, and useful timber trees, instead of those low, spreading, shrub-like, useless trees (except for fuel), which are generally to be found in hedge-rows at the present day, and which are such a continual annoyance to the occupiers, from their unsightliness and the great injury they do to the crops by their excessive spread of boughs so near to the ground ! I would here observe, that when hedge-rows are planted, trees should be chosen whose roots do not run near the surface, or produce suckers. Besides their ungraceful appearance, such ill formed trees are very injurious to the public roads, and often very troublesome to the traveller, when they are suffered to branch out in low,

spreading, shrub-like heads, which seldom attain to any considerable height; and when it becomes necessary to divest them of any of their great overgrown side boughs with the axe or saw, they become most unsightly things, and are generally good for very little when finally cut down. Any persons who have travelled much on the public roads must have observed this, if the contemplation of trees ever entered their minds; and how easily such evil consequences might be obviated, if the Billingtonian System were rightly understood and practised! All commissioners of roads ought to know it and have it practised; and hence the necessity of an Arboricultural Society, as suggested in my publication, for the improvement of the backward state of the much neglected art of arboriculture, and for the improvement and instruction of persons to perform or direct such operations. Then we might hope to see the art universally known and practised in this empire, otherwise it will be long before the prevailing errors are rooted out, and a better system prevails; then we might have handsome trees by the sides of the public roads, with fine, clear, straight stems of any height that might be thought advisable for such situations, when they would branch out into lofty branching heads, which would form an agreeable shady canopy in summer, while through the stems the air would circulate to dry the roads after rains; and in winter, when most wanted, the more horizontal rays of the sun would shine below the branches, to comfort the traveller, and dry the roads. It is astonishing how soon trees will attain a great height, with strength of stem, when my system is pursued, by preventing the side branches from extending too far and getting too large, and by encouraging one leading shoot to form the main trunk.

When the side branches have performed all their necessary functions, and the tree is sufficiently advanced in height and magnitude to do without them, they may be taken off, to render the stem clear and free from knots, similar to those trees that grow in the interior of woods, and have been divested of their side branches by natural causes. The branches of some sorts of trees would probably die of themselves when the top gets above to shade them, but not generally, because of the free access of *light* to the stems; so in such open situations they would have to be removed by knife, as by my system the branches would never be thicker than a man's thumb when taken off.

But of as still great importance would it be if introduced in coppices of underwood, where every shoot necessary left might be trained and wonderfully improved for the

purposes such produce is generally converted to, without any waste or loss; also in pleasure-grounds, ornamental plantations, parks, and even orchards, as most of the ornamental flowering trees and shrubs may be trained with clear straight stems to various heights, as fancy or taste may suggest, which would increase the various forms of which they are susceptible. Some might be trained to form handsome tall trees, others of a less stature, and others again left as shrubs; so that some would appear taller in the rear of others. Then, when it became necessary to remove or cut any away for future improvements, alterations, &c., the stems of such trees would be valuable to the turner and cabinet-maker, and for various other uses.

How easy, for instance, would it be to train the Portugal laurel to a fine straight stem, by pinching or breaking out the terminal or leading buds at from 18 in. to 2 or 3 ft. from the stem, or cutting in the terminal shoots at that distance, till the stem had arrived to any height at which it might be thought desirable to begin to form the head; when the small side branches could be taken off, and, in a year or two, the stem would assume a clean smooth appearance when the small wounds were healed over. Then we should have some fine Portugal laurel trees, instead of those great spreading bushes with several naked branches.

The common laurel might be trained by the same method; also the laburnum, the hawthorn, bird-cherry or hag-berry, crab, and holly; in fact, any of our common ornamental flowering trees and strongest shrubs. Various kinds of fruit trees raised from seeds may be introduced into woods, and trained by this system to valuable timber trees. Especially to the walnut tree, whose timber is so valuable, it would be of very great advantage; also to the locust, whose branches are so brittle and liable to be broken by the wind; to the tulip tree, Oriental and Occidental plane trees; in short, to any of the hardy, deciduous, exotic, forest trees.

Also, what immense advantage to the evergreen tribe! What tall straight trees of the cedar of Lebanon, the American red cedar, or any other sorts, might be raised by this system, with clear stems free from knots to any height, if the terminal buds were broken off, or a part of the terminal shoots cut or pinched off at 2 ft. or 3 ft. from the stem, and continued to be shortened till the stem had arrived to 10, 20, or 30 ft. high, as may be the wish of the proprietor of them! When the trees had arrived to a sufficient height above the length of the intended clear stem, the shortened small branches should be taken off, as directed for the Portugal laurel: then there

would be in future, for various purposes, valuable *cedar wood of English growth*. The same rules will apply to all the evergreen and resinous trees that will thrive in this country.

How beneficial would it be when applied to the hardy Scotch and larch firs, in cold and exposed situations, by breaking out the terminal buds and cutting in the terminal branches, to form thick screens on the windward and exposed quarters in such bleak situations, and in intermediate spaces in the form of hedges. I am certain, very valuable close thick hedges, for screens and shelter, might quickly be raised with Scotch firs by this system; also with spruce or larch firs. Such screens would be of immense benefit to break the severe blasts from trees of a more tender nature in their infancy, without the danger of injuring them by their overgrowth and shade. The good to be derived in the interior of plantations promiscuously planted with different sorts of trees, by shortening in of the branches, I have fully described in my publication. Room is made for the more permanent and valuable trees; and at the same time are increased the bulk, height, and regular tapering of the stem, similar to the larch and black Italian poplar in their natural mode of growth, only with branches of smaller size towards the lower part of the trees. Far different from where the side branches are suffered to extend themselves, growing thick and long, causing great injurious knots in the stems, and rendering the stems too thick at the lower end in proportion to their height, and hardly sufficient for any useful purpose: all which may be so easily avoided by my system. This is a subject I am never tired of: it would fill a volume to point out the immense national, as well as individual, advantages that must result from the practice of the Billingtonian System, when it is properly matured, understood, and practised; which makes me so anxious to have it quickly and universally known and practised.

Mr. Cobbett, in his recent publication on planting, asserts that no plants that are raised from layers, cuttings, grafts, or suckers, will ever make fine useful trees: it will still be only a limb or branch; and a limb or branch, he maintains, is never so good as a tree raised from the seed. But his *own practice* completely refutes *his opinion*; for what is his tree but a branch after he has cut off the first shoot from the seed. Equally absurd is it to say that a branch or limb of a tree is not so good or of the same quality, as the trunk. What are those trees that are frequently to be met with, with two or three trunks, limbs from the same root, which were only branches at first when the main trunk lost its leading shoot? As well might I say that a person's arms or legs are not of the same quality

as the body. But, by my system, any trees raised from layers, cuttings, &c., may be made as valuable as if they were raised from seed.

I am often oppressed with painful feelings, that, from circumstances which I could not prevent, but, perhaps, may some time publicly explain, I am at present so situated that I have no opportunity to exemplify the system upon living subjects; but must refer my readers to my publication, wherein I have clearly shown what great improvements I had effected, and was effecting, while I was at the Chopwell Woods belonging to His Majesty.

I am, Sir, yours, &c.

Shrewsbury, Nov. 21. 1829.

W. BILLINGTON.

ART. VIII. *Remarks on Sir Henry Steuart's Planter's Guide.*

By Mr. GORRIE, C.M.H.S., of Annat Gardens, Perthshire.

Sir,

WITH regard to my opinion of Sir Henry Steuart's *Planter's Guide*, it is in general highly favourable. He has certainly been successful in applying scientific principles to the art of planting. The historical part is sufficiently amusing, but is of little utility to the mere practical planter. To him it is of little consequence to know whether Count Maurice, Louis XIV. of France, or Charles II. of England, were the most eminent planters of their day, or whether they preceded or followed example. It is, however, something to know who was the first to set the admirable example of digging round the tree intended for removal a year or two before it was raised. For this, it seems, we are indebted to Lord Fitzharding; and, although many practical men may have since hit upon the same expedient, who may never have heard of the invention, or of the noble inventor, the operation might, with much propriety, be distinguished by the appellation of "Fitzhardising." [See Mr. Sang's *Letter to Sir Henry Steuart*, p. 87. *infra*.]

Sir Henry seems to have a particular horror at pruning, or what he calls "lopping," or "mutilation." Pruning to excess, I conceive, ought to be carefully guarded against; but, I believe, notwithstanding what practical and theoretical men may have said and written on the subject, that pruning partially a newly planted tree may be often a necessary, and always, when not overdone, a salutary practice: although I admit that it might be done with the best effect, at the same time, with the operation of Fitzhardising. In the eyes of Sir Henry, thus to advocate the practice of what he would call

mutilation, I know, will appear an unpardonable error; but let me remark, that, "if the root suffer, so do the branches:" and with all his care of the roots (and, certainly, it is very great), yet a considerable proportion of the most efficient roots must be displaced. If the roots and branches, previously to the act of transplanting, were in a fair proportion, will the most careful planter maintain that, after he removes a large tree, the equilibrium still exists? It is not enough to say that the supernumerary leaves will produce fresh roots, because it could be met by the assertion that supernumerary roots, even supposing them to exist, would also produce fresh buds and foliage. When plants are struck by cuttings, every gardener knows that an excess of foliage has a tendency to exhaust the natural sap in the shoot. When young shoots are used for budding, if the leaves are cut off, and the ends of the shoots kept moist, they will continue plump, and fit for being wrought at the end of a week; but, if they are suffered to remain on, the bark will often become dry in less than two days. It may, therefore, be inferred, that a given surface of foliage requires a corresponding number of feeding radicles, to afford a fair supply of sap for that foliage to elaborate, in order to maintain a tree in the most healthy state; and, if the roots are diminished in the act of planting, the health of the tree cannot be hurt, if, by judicious pruning, nearly an equal proportion of foliage is displaced. In beech, however, I have found it necessary to use the knife with caution; and I have known trees of this kind destroyed by excessive pruning, where no transplanting took place. Deciduous trees, for the most part, throw out buds to correct over-pruning: beech does not seem to possess that quality. That Sir Henry's trees succeeded is not to be wondered at, from the minute care with which the operation was performed; and I know of no operation where care is better bestowed, nor any where I have found it so necessary to remind the labourers to "take time." It should be kept in view, that the removal of large trees, and the natural shapes which he would allow them, can only be practised with propriety in park scenery. In the forest, the knife must be used, otherwise the carpenter will find very crabbed timber. This is the *only point* in the whole volume on which thirty years' experience compels me to differ, in some measure, from the intelligent author of the *Planter's Guide*. Severe pruning I conceive to be injurious; judicious pruning, salutary: but pruning at all would give us forests of sheer bushes.

The characteristics of trees most fit for transplanting, which Sir Henry describes, are excellent. "Bark thick and coarse, stems stout and short; tops extensive and spreading" (I would

rather say, tops spreading at the under branches, and forming as nearly a pyramid as possible, when transplanted, to be allowed to assume a natural shape afterwards, *if in a lawn* ;) “roots extensive and spreading” (here I cannot say) “like the tops.” These he aptly terms protecting properties, by which we may obtain “trees complete and perfect in all their parts;” (p. 99.) that is to say, a mass of spray and foliage, which, in a lawn, is a very noble object, and for which no proprietor would willingly accept a hundred pounds, but for which an auctioneer might find it difficult, after it had attained its full natural shape and size, to obtain as many pence: but every thing is good in its own place. Sir Henry has done much for the park, and many of his hints may be of much use to the forester. He deprecates the idea of taking trees for removal from “close plantations.” Plants which have stood too close in nursery rows should, for the same reasons, be avoided. Nature endeavours to clothe trees and plants, as well as wild animals, in a garb suitable to the climate in which they stand: even the highland oat has a much thicker coat than the same variety grown in the low valley; and plants brought from a thick wood, or close nursery rows, will be ill prepared, by their delicate bark and scanty foliage, to resist the blast in exposed situations. Sir Henry’s method of Fitzhardising is extremely judicious. (p. 218.) To those who would eradicate rushes, as directed by the author (note v. p. 482.), *if trees are to be planted*, I would recommend that they should peruse the 447th page of the first volume of the *Caledonian Horticultural Society’s Memoirs**, where they may see a useful hint, which my limits do not permit me to transcribe. His defence of what is called the “Scotch system of planting” (p. 465.) is unanswerable. I think I am supported by the opinion of most practical men in this quarter, in stating that moorish soils in particular, being naturally too loose in the texture, would, in most instances, be rendered useless for the purpose of planting by trenching. Although I am not an advocate for slit-planting; yet I have, on loose moor soils, found it necessary to adopt that mode, as giving less disturbance to the soil than even pitting.

Having had but a cursory glance at the second edition of the *Planter’s Guide*, before I received your letter, the above remarks are only from the notes I had taken, and may not have done the author sufficient justice. Such as they are, however, they are much at your service.

I am, Sir, yours, &c.

Aug. 29. 1829.

ARCHIBALD GORRIE.

* We shall quote this page in next Number. — Cond.

ART. IX. *Remarks on Sir Henry Steuart's Planter's Guide.*
By QUERCUS.

Sir,

SINCE the able review of Sir Henry Steuart's *Planter's Guide* by Mr. Main (Vol. IV. p. 115.), I have seen the work it contains more egotism than might have been expected. I will make a few remarks on the manner Sir Henry speaks of the capabilities of gardeners and wood-foresters, in respect of their knowledge in the transplanting of large forest trees. In the preface he says :—“ The gardener knows little about work without the walls of the garden ; the wood-forester is only a mere lopper or cutter of wood.” Gentlemen themselves are to blame for not having woodmen or planters whose practice combines science also. It is no uncommon sight to see some old domestic, such as has been coachman or groom formerly or perhaps the cart and plough wright, having the management of the plantations, and that, too, on pretty extensive estates. Such men may do to report a broken fence, if they cannot mend it ; or they may report to their employer such and such people for carrying away brushwood, &c. : but they know as little about the thinning for the future welfare of the plantations, or the proper method of planting, so as to produce such and such effects, according to the local situation of the ground and surrounding scenery, as an old tailor would do who had never been without the walls of a city. Let noble men and gentlemen give the same rate of wages to a first-rate planter as they would do to a first-rate gardener, and engage none who cannot give some proofs of their knowledge in the different parts of forest management, and of the value of full grown timber, together with their capability to harmonise the plantations or grounds to be planted with the surrounding scenery. I say, let such, and such qualifications only, be the means of obtaining respectable situations, and then Sir Henry Steuart will see wood-foresters capable of doing something more than *lopping* off a bough, or cutting down a tree. But as I am one of those beings denominated *a mere lopper or cutter of wood*, I must tell Sir Henry that I have transplanted trees of from 10 to 16 ft. high, without any machine, and not above one in sixty died. The trees were carried about a mile on a low wood-waggon, two, and sometimes three, at one time. After digging well round the tree and below the roots, I made the balls be reduced with a pick (taking care of the small fibrous roots), so that six or eight men could lift them to the waggon with a large hand-barrow.

By the by, I knew how to use this pick before Sir Henry's book was printed; and although my employer was for pruning and shortening the boughs, I answered in the negative. Elms and sycamore I found do best; although horsechestnut and service tree did very well. Spruce and balm of Gilead firs pushed well after being two years transplanted. I consider the elm a good tree for transplanting, from its very fibrous roots. Of course, the trees referred to above are small in comparison of the Allanton trees; but, if care is taken, the success is certain. Where there are plantations of about twenty years' growth on an estate, clumps, single trees, park scenery, &c., may be much improved, at very little expense. I do not consider it needful to have a machine for lifting trees below 16 ft. in height; for trees 12 and 15 ft. high may be lifted, two and three at a time, as I have hinted above. I can assure Sir Henry Steuart, there are gardeners, "*and loppers and cutters of wood,*" also, that, if they had the same means as he possessed, would execute work worthy a visit from a deputation of the Highland Society. Through the medium of the *Magazine*, I wish to pay my respects to John Moggridge, Esq., I never saw the gentleman, and most likely never shall; but he manifests such a spirit of philanthropy in the means he has used to better the condition of the labouring classes, that I have often thought of him myself, and spoken of him to others. The plans he has put in practice are of a more substantial nature than what your correspondent *Variegata* points out as calculated to educate the feelings of the labouring classes: people must first have a due portion of the necessaries of life, *food and clothing*, before their feelings will be any way softened by parochial museums, dancing, &c.

I am, Sir, &c.

September, 1829.

QUERCUS.

ART. X. *Notice of a new Guard for Single Trees in Parks and on Lawns.* By Mr. JOHN HISLOP, Gardener to Colonel Howard, at Ashstead Park, Surrey.

Sir,

I SOME time ago sent you a query for the *Gardener's Magazine*, as to the best mode of guarding single trees, on lawns or in parks, from the depredations of various kinds of cattle. By the *best* mode I, of course, meant efficiency, lightness, and economy. The answer returned was (Vol. III. p. 254.), "The

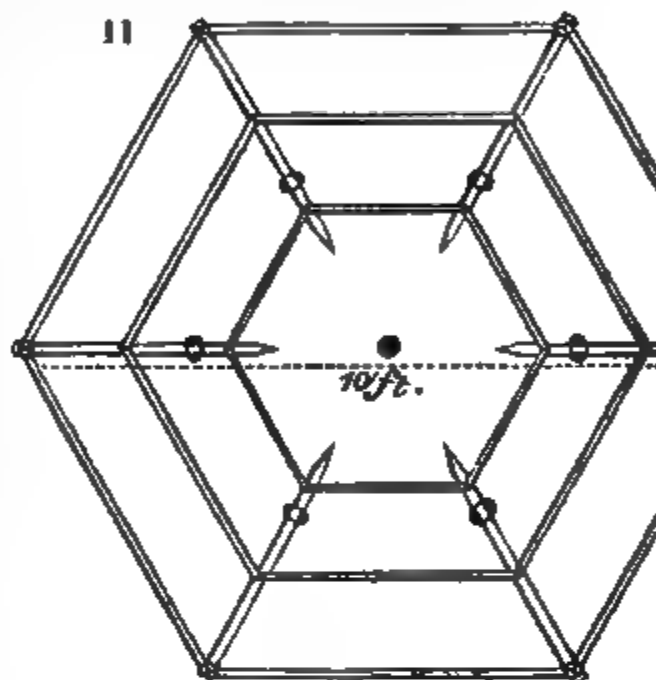
branches of thorn round their stems with willow sho which was any thing but satisfactory.

As the subject deserves some attention, I herewith send a sketch of a tree-guard in use at this place, which I can to combine all the required qualities, in a degree far beyond comparison with any other mode I have ever seen. I

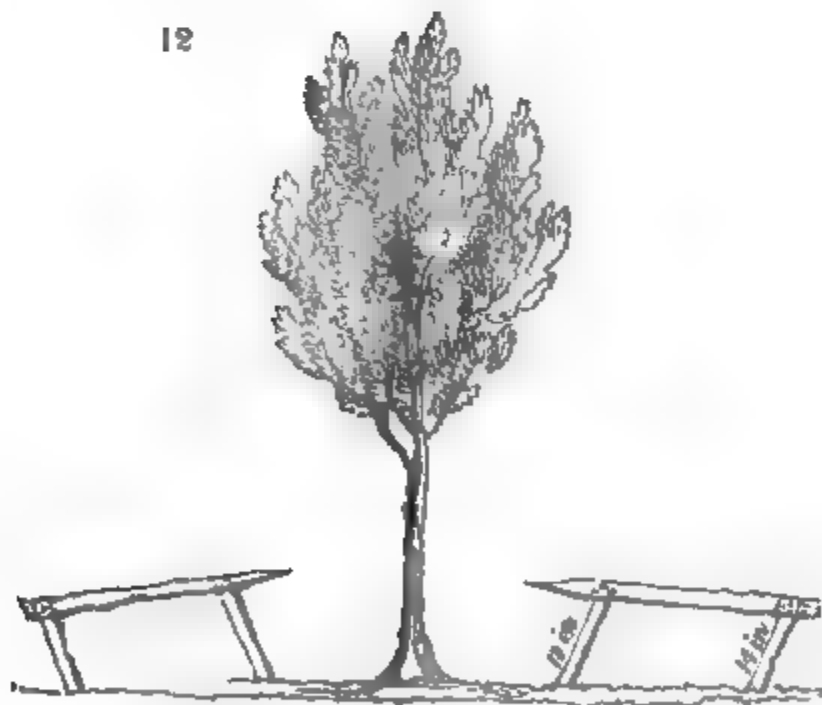
hexagon (*fig. 11.*) composed merely of rustic materials: oak stumps driven into the ground, to rise 16 in. average; and the rails, consisting of split hurdle poles, or any similar material, nailed upon them, and a little inclined, as shown in the sketch.

(*fig. 12.*) It is needless to enter into any comparison with other modes of guarding: the advantages

will be apparent, at a glance, to any one at all acquainted with the



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ject. I only add its efficiency has been sufficiently proved by exposure to horses, locks, and asses.

You are aware that it is a matter of importance to bestow attention

them. Our new guards have, no doubt, from a conviction of the truth of the above remarks, been styled Dendro-tics, which is to remain, when immortalised in the *Gleaner*

Magazine, their distinctive and *characteristic* name in all time to come. Whether any may infer that the above very appropriate designation shows any thing like a deriding or ironical aspect towards the lofty and sonorous names frequently attached to trifling inventions, must be left to the judgment of your numerous readers.

I am, Sir, &c.

Ashtead Park, Oct. 13. 1829.

JOHN HISLOP.

ART. XI. *An improved Method of planting and protecting Bulbs in Flower Borders.* By Mr. W. SEYMOUR.

Sir,

I AM surprised that the beautiful tribe of bulbous-flowering plants are not more propagated and planted amongst the admirers of flowers, as there are a great many of them hardy, as *Narcíssus*, *Fritillària*, and *Scílla*; and some of the *ixias*, *gladioluses*, and *amaryllises* are hardy enough for warm situations. As I suppose the objection to the cultivation of them is owing to their liability to being destroyed (while in a dormant state) by the operations of digging and hoeing, I will endeavour to describe to you a method of protecting them, as practised in the garden of Mrs. Saltmarsh, of Saltmarsh near Howden, which is as follows: — Having determined the place for the clump or patch, the earth is taken out to the depth of about 6 in. ; and an earthenware rim, of the shape of a common garden pot cut into two at half its depth, is plunged about $1\frac{1}{2}$ in. below the surface of the soil, the inside filled to the proper depth with good earth, and the bulbs planted, so that their tops may be about level with the top of the rim: by which means they can be taken up and planted at any season of the year, without much detriment to the plants, as the rim holds the ball of earth together.

The rims can be made by any common potter, at about half the price of garden pots of the same width; and, if tolerably hard burnt, they will last a number of years, as they are buried out of the direct action of the weather.

I am, Sir, &c.

Carlton, July 25. 1829.

WM. SEYMOUR.

ART. XII. *Some Remarks on the Culture of Pines, and other Plants, useful or ornamental, in Beds heated by Steam acting on a Mass of loose Stones.* By JOHN HAY, Esq., Garden Architect, Edinburgh.

Sir,

THAT part of the pit for the reception of the pine-pots, above the cover of the steam vault or chamber, is 20 in. in depth. As the chamber is covered with Arbroath pavement, a kind of stone of a very hard and impervious quality, and a better conductor of heat than some other sorts of stone or tiles, a layer of small cinders, or soft bricks broken very small, 4 in. deep, is laid above the cover. These retain the heat longer, and at the same time act as a drain for carrying off any moisture that may proceed from the bottom of the pots or otherwise.

You will see from my paper * the reason why the pots of pines at Cunnoquhie had to stand on the layer of cinders, namely, the want of head room for the plants, the pits having been built solely for the growth of melons; but now that these pits are altered to suit the culture of both pines and melons, the depth of the pit above the cover of the bed of stones is the same in both: for the melons, 4 in. of cinders, and 15 or 16 in. of soil above; and for the pines, 4 in. of cinders, 3 in. of the same substance in which the pots are plunged, and 12 in. for the depth of the pots. The edges of the pots of pines will then be one inch lower than the top of the steam-flue.

Colonel Paterson mentioned to me that he could procure tanners' bark at Cupar for plunging the pine-pots in. This I objected to, as being the worst substance that could be employed for the purpose, as, being of an open nature, it would permit the heat to escape; but I recommended the use of well rotted leaves, or any free gravelly soil. At Cast Semple, this season, about 16 ft. in length of one of the steam pits have been planted, by way of trial, with pines without pots, in a bed of prepared soil, with a view of fruiting the plants next summer. I also recommended Colonel Paterson to do the same in one light of his pits, which I suppose has been done. Tanners' bark has not been employed at Cast Semple for plunging the pots in; in general, it has been rotted leaves, firmly pressed round the pots. This season, however, two small portions of one of the pits have been separated from the rest by boards; and into the one finished

* In the *Caledonian Horticultural Transactions*; it will be given in the next Number, with correct copies of the engravings. — *Cond.*

and into the other very coarse sand mixed with small gravel, such as is found in beds of rivers, is put for plunging the pots, in order to ascertain if any advantage will result from using such substances.

Rotten dung may answer as well as rotten leaves, only there can exist no necessity in this case for using nutritious substances. But I intend to request the gardener at Castle Semple to plant this season, by way of experiment, about a dozen of fruiting pines in pots, with two rows of holes in the sides, about 3 or 5 in. from the edges, and to plunge them in properly prepared soil. I shall also mention well rotted cow-dung. The holes will allow a part of the roots to run out of the pots, and derive nourishment from the material in which the pots are plunged; and as these pines will be grown in the same pit with those in earth above mentioned, and with others in pots without holes in their sides, an opportunity will be afforded of observing what advantage would arise from such a mode of treatment.

Sawdust I have long used in frames for striking cuttings. It was employed in one of the first steam plant-stoves that I erected: but an immense number of small red worms bred among the dust; occasioned, I suppose, by too much moisture getting through the joints of the pavement which covered the bed of stones, in consequence of the joints not having been checked upon each other, and only being pointed with common lime: the use of it was therefore discontinued. I have no doubt that ashes would do very well, but I cannot speak of them from experience. Were it found convenient to use them, it would give the bed a more cleanly and finished appearance to be covered with a thin layer of gravel or small pebbles. After all, perhaps a light gravelly soil will be found to be the most suitable, as it will allow the moisture received from watering the pines over-head in the summer months to drain off readily: but it would not be proper to plunge in this such pots as have holes in the sides.

I think this method of heating by steam is capable of improvement, which, I doubt not, it will receive when it comes under the management of gardeners of experience. I am confident that by this means pine-apples and melons, or tender exotic plants for ornament, may be grown at any place where fuel can be procured, although neither tanners' bark nor dung is to be got; nor have I any doubt that it could be applied with success, under some modifications, to the different kinds of forcing.

I am, Sir, &c.

Edinburgh, July 24. 1829.

JOHN HAY.

September 12. — I have just received a letter from Mr. Lauder, the gardener at Castle Semple, in answer to mine about the pines in the steam-pits, and the substances in which the pots are plunged. Perhaps the information it contains may be of some service to you, before you make use of what I formerly stated. He says, “The pines that I planted in a bed of soil in one of the steam-pits are looking remarkably well. The tall-growing kinds are placed in the back of the pit, and the queen pines in the front. Although the queen pines are only last autumn’s suckers, they are now (Sept. 9.) the largest and finest-looking plants that I ever recollect to have seen; indeed, few gardeners that have seen them will believe that they are not yet a year old. And what makes them look better than the other plants in pots, and wrought with leaves or tan, is, that there is not a single damaged leaf to be observed upon them; whereas those last mentioned have their leaves invariably injured more or less, by removing them so often to renew the bottom heat. I have got the pots with the holes in their sides ready for the fruiting plants, and will have the different kinds put in next week.

“With regard to the substances for plunging the pots of pines in, I am of your opinion that light gravelly soil is better than either rotten leaves or tan bark. As a proof of this, I may mention, that I have plunged the two long thermometers in the same steam-pit, the one in the earth in which the pine plants are growing without pots, and the other among the rotten leaves in which the pots with pines are plunged; and the result is, that the thermometer in the bed of earth stands several degrees higher than the one in the bed of rotten leaves, although both the thermometers were plunged exactly to the same depth.”

I am sorry Mr. Lauder has not stated the exact number of degrees indicated by the thermometer placed in the earth above that among the rotten leaves, and I intend to write to him to specify the difference; but an opportunity having occurred of sending you this, I was unwilling to lose it. It will be next autumn before the results of the experiments which I formerly mentioned to you, as now in progress at Castle Semple, can be properly ascertained. If I am spared till that time, I shall be happy to communicate them to you. — J. H.

ART. XIII. *Remarks on the Culture of Pear Trees.* By Mr. BERNARD SAUNDERS, Nurseryman, Island of Jersey.

Sir,

IN Vol. V. p. 60. of your useful Magazine, Mr. Robert Hiver has made some excellent remarks on the cultivation of the pear tree. I perfectly coincide with him in many of his remarks, and I am of opinion that the length of time pear trees in general are before they begin to produce, either from bad pruning or the over-manured borders, has prevented many gentlemen and amateurs of this much esteemed fruit from cultivating it more extensively: but I have found from practice that there are many exceptions to the plan laid down by him; for instance, it is almost impossible to lay down a general rule for the management and pruning of pear trees. The varieties of pears require various modes of pruning. Some sorts seldom or never make large trees, from their great inclination to fruit, which, in spite of the knife, you can scarcely prevent: others, again, will produce abundance of wood for some years, and no fruit, although left entirely to nature: others produce fruit on their last year's wood, like a peach: others have a blossom bud at the extremity of every young shoot; so that, if shortened, it destroys the fruit, and if not shortened, it tends to stop the growth of the tree, and prevents it from filling the space of wall allotted to it. The object gardeners have generally in view is first to make fine, handsome, well trained trees, either in the fan or horizontal form. To attain this object, the knife must be very judiciously used for a few years, without paying much regard to the quantity of fruit produced. I agree with Mr. Hiver in his comparison of the common thorn with the pear; and in some degree it is applicable where fine handsome trained trees are not desired. I know from experience that many sorts of pear trees left to nature only two or three years will bloom and fruit; but such will seldom or never make handsome trees, unless previously formed and trained as I have above stated. It would be a very desirable object, and very gratifying to me, and I have no doubt, Sir, to many of your readers, if Mr. Hiver would condescend, in your next Number, to give us a few more particulars, such as the names of his pears, the age of his trees, and how they were treated in the first stages of their growth; and I shall feel a pleasure, in return, to send you a few more remarks on the sort of stocks employed for pears, so as to render them productive in deep rich soil, and to obviate the necessity of applying stones, as Mr. Hiver has suggested.

There are numbers of our new sorts of pears lately introduced, of a very superior quality, which deserve to be more extensively known and cultivated; many of which, with their time of ripening, exposure required, as quenouilles and otherwise, I will give you in some future Number.

I am, Sir, &c.

BERNARD SAUNDERS.

Nursery, Island of Jersey, April 14. 1829.

ART. XIV. *On the Evil Effects of planting Fruit Trees in too rich a Soil.* By Mr. ROBERT ERRINGTON.

Sir,

I AM led to make the following remarks from observing the evil effects arising from planting fruit trees in too rich a soil, especially peaches and nectarines, trusting they may be of service in preventing the misapplication of dung by those who are not practical hands in the business. The trees alluded to were planted in the spring of 1827, on a southern aspect; the natural soil of the border is a very light sandy loam, of no tenacity, but containing a trifling degree of a kind of marly principle: this soil is about 20 in. deep, on a stratum of red sand of 4 ft., and the subsoil altogether very dry. The person who planted them (now no more) had a heavy coat of rotten dung put on about 1 ft. thick, and trenched 20 in. deep, which, of course, threw the dung with some soil on the sandy stratum. After this another coat of dung was dug in at top, and the trees planted in rich soil also. The trees the first season were very vigorous, but this year they have surpassed all that I ever witnessed, some shoots being nearly 6 ft. long and thick in proportion, and most of them run to lateral and now it is difficult to know how to prune them to provide for a regular succession of wood, unless, as Agronome mane his apples, I cut off two feet from three, and so on; what method of pruning, however it may have succeeded with him I distrust, and would rather follow Mr. Harrison. I find roots have entered the dung at the bottom, which of course causes the redundancy of sap; and when they have exhausted that superficial fund, the reciprocal balance between them and branches being destroyed, many injurious effects inevitably follow. Now had the soil in which they were been dressed with as much sound loam, with a little dung would have grown more steadily and have been incon-

more permanent; for it is that adhesive principle the soil here requires. We have many old trees at this place, still carrying the marks of having been originally treated in the same manner, which are now failing, when they should be in their prime. For my part, I should advise that the soil immediately in contact with the root be slightly inferior in point of richness to the rest, as on the consequent formation of the head for two years after planting, much of the well furnishing of the wall eventually depends. There may be some who are blessed with a soil so well adapted by nature, that they may consider such particular care superfluous; but there are many, also, who, if they do not coincide with the opinions here expressed, know it will not do to let them take their chance without making some provision. With regard to Agronome's opinion, that "trees will never go into bad soil if they have plenty of food," I consider the assertion rather paradoxical; because I know that under certain circumstances they will enter pernicious matter, and at improper depths; and no doubt they extract thence the seeds of disease, as may be frequently seen in the consequent failure of their heads.

I am, Sir, &c.

ROBERT ERRINGTON.

Oulton Park, Cheshire, Dec. 1828.

ART. XV. *On the Management of the Peach Tree.*
By H. JOHN NEWINGTON.

Sir,

I HAVE heard it frequently observed by many gentlemen, that the British gardeners are more deficient in the management of peach and nectarine trees, than in most other parts of their profession. This is not only the complaint of the gentlemen, but the confession of the gardeners themselves, and is equally referable to the trees on the wall and in the forcing-house. The frequent failure of these crops arises, in my opinion, from the manner in which they prune their trees. It is the endeavour of every cultivator to procure annually a great supply of long and strong wood, sufficiently large to make basket rods, and from these he expects his crop; but nothing can be more unnatural or erroneous than this system of pruning. Whoever has seen these trees in Malta or America, and noticed the very short and small wood from which such large peaches are produced, would immediately condemn the British gardener's practice. Mr. Harrison, the eminent

gardener at Wortley, succeeded well with what I consider a bad system of pruning, by shortening his shoots severely; but his garden lay extremely exposed to the winds which are beneficial in moderating the luxuriance of growth of plants, and such situations are not as liable to chilly damps and blights as low and more sheltered places. I hope Mr. Harrison will feel no uneasiness at this disapproval of his system of pruning this kind of fruit trees, as he merits so much praise as an ingenious gardener. I have for many years past pruned my trees in a manner that has offered me uniform success; it is simply by diminishing the vigour of the shoots: in summer I shorten back to a few eyes a considerable portion of the young spray, and I retain these in the spring dressing to afford the future crop. The man who has cultivated the peach tree for some time must have observed that the branches which have lost their leading buds never fail to set their fruit well, and often for a long time continue to swell such fruit faster than branches that are crowned with luxuriant leading shoots. This may be accounted for by the ascending sap being carried forward by the luxuriant growth above, and thus depriving or carrying away from the fruit its natural juice; they then wither and fall off. As my borders are not manured, nor made deep, the trees therefore never create unwholesome or too much sap; and without much artificial aid produce the kind of wood I require; my crops, in consequence are uniformly good, and the fruit large and well flavoured. As I live near London, I never find it necessary to cover my trees in spring, when in blossom. The flowers of well ripened wood, such as my plants produce, are more hardy than those of more spongy growths. Insects will be always found to do more harm in this part of the kingdom than bad weather. In exceedingly early seasons it may be necessary to cover the trees, and old netting, discarded by fishermen, is the best protection, and this can be bought for 2*l.* per cwt., and will last many years. It is a sure mark of a bad cultivator to see the borders cropped with potatoes and other gross vegetables, though it may be good, in conformity with nature, to shade the ground with a slight crop, such as weak-growing flowers, small herbs, or mignonette. Much of what you have stated respecting the Dutch forcing at Hylands is in unison with my practice; the trees the being frequently removed are never luxuriant, but produce the kind of wood already described. I have seen that garden and am, perhaps, from the extent of my practice, a more competent judge than yourself. From what I noticed at that place I would recommend to the British gardener a structure something between the Dutch frame and the English forcing-house.

as the most certain and economical for forcing these and most other fruits. I am now erecting an extensive range of glass of this description, and I entertain sanguine hopes of superior success ; but of this you shall hear more hereafter. In training my trees, I pursue the fan manner recommended by your correspondents Kendall and Hiver. The old crooked mode I find to be particularly injurious to peach trees, by forming obstructions to the ascending and descending sap. Thus at the curvatures luxuriant excrescences are generated, which in time destroy the regular balance of the tree, and subsequently bring on its death. If you find the contents of this communication to merit your notice, I shall feel pleasure in having contributed my mite to the Magazine. I have many particulars to send you relating to the important parts of horticulture, and the difficulties and enemies incident to gardeners, amongst the most insidious of the last may be numbered stewards, house-keepers, ladies' maids, grubs, and spiders.

I am, Sir, &c.

September, 1829.

H. JOHN NEWINGTON.

ART. XVI. *Recipe for a Composition for destroying and guarding against Insects on Wall Trees.* By Mr. JAMES BURGE, Gardener to the Rev. Richard Lane of Coffleet, Devonshire.

Sir,

WHEN insects are on fruit trees in leaf, it costs much expense and labour to subdue them ; oftentimes they will make their reappearance, and frequently the trees will, in the ensuing spring have great numbers of the same species of insects on them ; and the remedy that is made use of to destroy them often hurts their foliage. If the following composition be laid on the trees in the spring after pruning annually, it will be an incitement to the foliage, and a preservative for the trees from insects ; and I hope that none will attempt to use it without giving it a fair and candid trial.

Take sulphur vivum, slaked lime sifted fine, and Scotch snuff, of each an equal quantity, of lampblack half the quantity, and let them be well blended : add to them soap suds and urine, until it gets the consistence of thick paint. Before you prune your trees, let them be all unnailed from the wall ; and after pruning, let the composition be laid on the trees with a painter's brush carefully ; paint every pore of the branches and buds with it. It has great effect on the bloom, and invi-

gorates the trees. If any of the composition be left for a future occasion, it should be kept in a tub, or other vessel, and urine poured on it, so as to cover the surface.

I am, Sir, &c.

JAMES BURGE.

Coffleet, near Plympton, Nov. 5. 1826.

ART. XVII. *On the Culture of the Potato, both in the Field and Garden, and for early as well as main and late Crops.* By Mr. J. ELLES, late Gardener to the Marquess of Bath, at Longleat.

Sir,

THE production of a good potato, whether early or late, must at all times be a subject of importance, both to the farmer and gardener: and although its cultivation is very easy and simple, and no doubt appears so, even to the veriest tyro in either calling; yet the potatoes sold in and about London are generally so very inferior in quality, that we must suppose the soil either to be very unfavourable, or the cultivation defective; which latter supposition is rather hazardous, when we consider the wealth, skill, and competition of such a host of market-gardeners as supply the metropolis with this useful vegetable. However, be the cause what it may, the article is not creditable to the grower, nor can such waxy watery things be very nutritious to the consumer. If you think the following hints would have a tendency to remedy the evil complained of, I should be happy to see them inserted in the Gardener's Magazine.

For a late Crop of Potatoes. — Whether the ground is light or heavy, dig it well before planting, which may be done about the middle or latter end of May; and if the ground is heavy, draw the drills 2 ft. apart, or *more* if it is rich as well as heavy; *room* being essentially necessary in such ground, to perfect the growth of a crop of good mealy potatoes; and rather think that it is thick planting in some measure which so greatly deteriorates the produce about London. To plant sets with *single eyes*, 5 or 6 in. deep, and 15 to 20 asunder in the rows, according to the nature of the soil, the potato to be planted; cover with light muck, and afterwards with a very little earth. In light soils the process is the same, only let the sets be planted thicker and deeper, and cover with as much muck as you please; but in either case as soon as the plants are 2 or 3 in. high, take a *mattc*

would banish entirely the common hoe, not only from the potato yard, but from the kitchen-garden also), and with this powerful implement move the earth about the plants and between the rows 5, 6, 7, 8, or 9 in. deep, according to the depth or shallowness of the soil, in a fine hot dry day, when the weeds will be more effectually destroyed by this operation, than by two or three ordinary hoeings. The plants will now grow rapidly; and in the course of a fortnight or three weeks the earth should again be well moved between the rows with the mattock, and the plants earthed up into good large ridges, which will completely clean the ground for the season; or only one side of the row may be earthed up, and, after a week's interval, the other side may be earthed up a little higher, which will twist the stem, and in some sorts increase the produce. Either plan effectually secures the stems; for, being all single, they are liable to be injured by strong winds, until by branching out, the ground is covered, and then the danger is over. Some sorts branch freely, others but little, which should never be lost sight of in planting. Ordinary ground cultivated in this manner, will generally yield 240 lbs. of potatoes a rod.

For an early Crop.—Plant full-sized whole potatoes the first week in October, on a south border, after the spade, in trenches 9 or 10 in. deep, and cover well with muck, leaving the border as light as possible, from which a crop of radishes may be cleared by the latter end of March; for by that time the plants will be showing themselves above ground, unless the weather should prove very severe. As soon as they are seen, let the earth be deeply hacked with a mattock, and made very loose about the plants; then in a fortnight or three weeks move the surface again, but the plants need not be earthed up, unless they are very much exposed to the wind, when a little may be drawn about them to keep them steady. By this method fine ash-leaved kidney potatoes may be gathered by the 12th or 15th of May, even in situations not very favourable for early crops, and nearly three weeks earlier than can be gathered from *sets* planted in the same situation in the latter end of February; and if ordinary care is taken in planting, no danger need be apprehended from the frost.

For early crops I am not aware that any sort sent to the table is more generally approved of than the ash-leaved kidney; nor for late crops do I know a better keeper, or a more productive sort, than the Devonshire apple, a red, round, and deep-eyed potato. The intermediate sorts are very numerous, and some of great excellence, but mostly with local or provincial names.

The following list will show a succession of good potatoes for the year, without artificial means : —

May, June, and July	-	Ash-leaved, red, and other kidneys.	
July and August	-	Purple eyes; a fine, large, round, mealy potato.	
September, October, and November	-	Prussian; a red mealy potato, an excellent bearer.	
November, December, and January	-	Devonshire apple, Prince's beauties	} All good.
February, March, April, and May	-	Red colliers and white long-keepers	

The above are known and cultivated extensively about Frome, Warminster, Bradford, Trowbridge, and Westbury.

I am, Sir, &c.

J. ELLES.

198. Sloane Street, Sept. 1. 1829.

ART. XVIII. *Notice of the Culture and Produce of a Patch of Maize, or Cobbett's Corn, grown by Mr. Greig, at Baywater.*
Communicated by Mr. GREIG.

Sir,

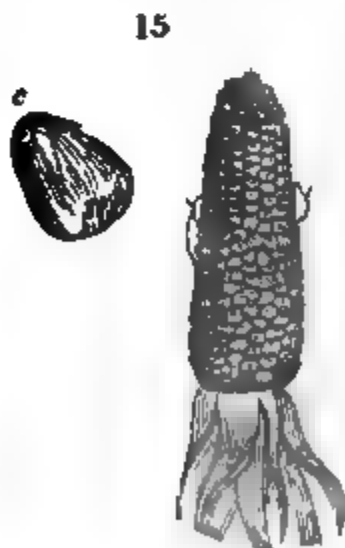
I now send you an account of my method of growing Mr. Cobbett's corn, of which I furnished you with a fair specimen. * (*fig. 13.*) Having got the ground well dug early in May, on the 7th of that month I drew seven drills, 3 ft. apart, of the same depth as for kidneybeans, and planted the seed of two ears of corn, purchased of Mr. Cobbett, 6 in. from seed to seed, treading the rows, as my ground was very dry. In a week or ten days the corn came up, scarcely a seed missing; and, about a week after that, I gave it a good hoeing, which greatly improved it. A fortnight afterwards I gave it a second hoeing, and about the 20th of June a third hoeing,



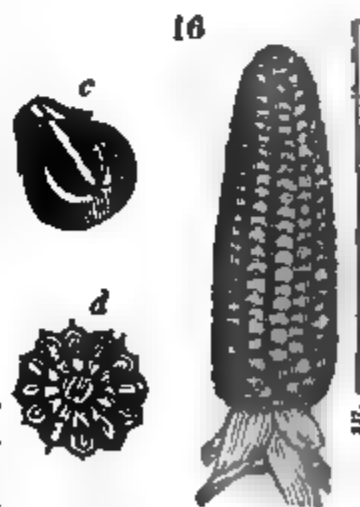
* To enable our readers to compare the size of the ears of the present with the ears of the large varieties grown in North America.

stirring the ground full 4 in. deep. Three days after this last hoeing I landed the corn up, and in the middle of August topped it, cutting off the male blossom. (*fig. 13. b*) I have now gathered it; and from the seven rows, each 38 ft. long, the produce is 1156 good ears, and 339 defective ones, which, had it been a fine summer, would all have been good. I have rubbed out the corn of seventeen ears, not one of which was what I call a fine ear, and the produce is a quart of clear corn; therefore the 1156 good ears produce 2 bushels and half a peck for $3\frac{1}{2}$ rods of ground, or 102 bushels per acre. The defective ears, being only half ripe or very small, I do not include in my calculation.

Mr. Cobbett having seen my crop just after the last hoeing, stated in his *Register* that it was the finest he had seen; but, not to overrate the produce, say that it takes eighteen ears to make one quart of corn: then there is 96 bushels per acre.



figured one of the latter (*fig. 17.*), sent us last year (Vol. V. p. 211.) by Messrs. Thorburn of New York, to the same scale as the ear of Mr. Greig's plant. (*fig. 13. a*) We have also given a figure (*fig. 14.*), to the same scale as *fig. 13.* of the average of a row of plants raised in our garden from this large variety;



in point of culture, did not mature a single ear. By comparing the two

This is a great produce, and I hope every gardener will plant a small piece, if only to send the ear to his master's table in its milky state. Any man who can grow kidneybeans can grow corn, and any ground that will grow the beans will grow the corn. My ground is light, about one foot deep, on gravel, much exposed, and liable to early frosts in autumn, my georginas having been killed three weeks ago.

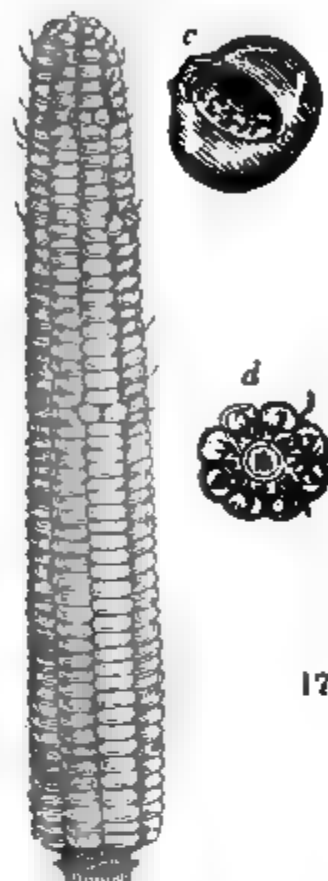
The middle of April, if the weather be dry, will be the best time to plant; and I think 10 in. or 1 ft. apart, according to the goodness of the ground, will be better than 6 in. Those plants which had one sucker left, bore more ears than those that had no suckers. I had one plant with eleven ears, several with nine and ten, and a great many with seven and eight ears each.

I have endeavoured to give all the information I think will be required for growing this crop with success; but those who wish to know more of the corn and its uses, should read Mr. Cobbett's book, that gentleman being better acquainted with it than I profess to be.

I am, Sir, &c.

JAMES GREIG.

Conduit Nursery, Bayswater, Oct. 28. 1829.



plants (*fig. 13.* and *fig. 14.*), and the two ears and grains (*fig. 15.* and *fig. 16.*) belonging to them, our readers will have at least a very palpable idea of the important difference between the two varieties; and a little reflection will convince the young gardener or farmer how much of his success in all the departments of culture, in the field or in the garden, will depend on the judicious selection of varieties. Botanical gardeners, we sometimes think, are too apt to overlook the important differences, with reference to culture and product, that exist between such slender botanical distinctions, in consequence of knowing their insignificance with reference to botanical nomenclature; but no gardener or farmer could raise a crop of ripe ears from plants having the habit of *fig. 14.*, while plants with the habit of *fig. 13.* have ripened tolerable crops, even in a very unfavourable season. The difference between these two varieties, in a botanical point of view, is of the slightest description. See on this important subject Bishop's *Causal Botany*. In the different figures (13 to 17.), the single grains (*c*) are all of the natural size. The sections (*d*) show the manner in which the grains are arrayed on the ear. — *Cond.*

ART. XIX. *The Result of some Experiments with Ten Varieties of Indian Corn, with a comparative Estimate of the Merits of this Corn, as compared with those Corns commonly grown by the Farmers of Britain.* By G. C.

Sir,

As you have requested me to report on the culture of Indian corn in the neighbourhood of London, as an article of garden and field produce, I have devoted some time to the enquiry. I find that as yet no conclusive result can be safely arrived at. In the first place, but few varieties, and those not the best, have been selected for trial; secondly, I have not heard of any extensive breadth, except Mr. Cobbett's at Barn Elms, to which I have not had an opportunity of paying any attention. Mr. Poynter of Waltham Green has cultivated ten varieties, of which he has furnished me with the following particulars. I find the varieties were supplied to him by Mr. W. Cobbett, jun.

No. 1.	Sweet corn	-	-	-	Useless to attempt growing.
2.	Maize quarantaine (ripening in forty days)	-	-	-	} May succeed in fine seasons. May also do well in warm summers.
3.	Early golden corn	-	-	-	
4.	Large yellow corn, from Pennsylvania	-	-	-	
5.	Large red	-	-	-	} Useless. The same.
6.	Large yellow flint	-	-	-	
7.	Large white flint	-	-	-	
8.	Pearl corn	-	-	-	} Only now (October 31.) in bloom.
9.	Egyptian or chicken corn [Maïs à poulet, le plus petit et le plus précocé, of Vilmorin's catalogue]	-	-	-	
10.	Cobbett's early corn	-	-	-	} Very early, rises well, but small. Equally good, but not quite so early.

I shall first state the course of culture pursued, and then proceed to comment on the result. The seed was planted on the 8th of May last on a slight heat, protected by a frame and sash, which sash was removed in fine weather. On the 19th the plants were placed in a compartment which had been previously sown with radishes, but the crop gathered. The rows were 2½ ft. apart, and the plants about 1 ft. from each other; a row of Cos lettuces were then planted between them. From the extreme wetness of the season, the ground, instead of being hoed and drawn to the plants in the rows, was simply dug twice, and kept as clean as possible. The result as above.

The following particulars are only matter of calculation:—
On thirty rods of Cobbett's corn, fifty-seven rows, each row

containing forty plants, every four rows may be presumed to yield about one bushel of clean corn, or fourteen bushels in the whole, or seventy-four bushels to the acre.

No. 1. *Sweet Corn* is used principally as a culinary vegetable, as a substitute for peas in a dry season, and can be therefore of little importance in a country which at all times furnishes such large supplies (of what I may, I trust, say there cannot be two opinions about) of a better vegetable.

No. 2. *Maïs quarantaine* appears to be an early variety, not much unlike No. 10., and therefore its merits may rest on the proof of that.

No. 3. *The Early Golden*, or Sioux corn, is a very early variety, said to have been originally brought from among the Sioux Indians, and, as an early bright yellow corn, may be entitled to our consideration.

Nos. 4, 5, 6, 7. are well known varieties, grown throughout the middle states of North America, and I have no doubt extensively also in South America. They are admitted to yield from forty to sixty bushels of clean corn per acre, as the soil, situation, culture and season may admit, but at present they are of no use here as an article of field culture.

No. 8. *White Pearl Corn* (which I must really consider a distinct variety, despite of your doubts in the last Number, from its very different manner of growth, yielding a much greater foliage, and coming into bloom four or six weeks later than any other), could a supply of seed be obtained, might be made, as an article of forage in dry seasons, a crop of considerable value to the farmer for the supply of his cattle.

No. 9. *Chicken Corn* is a very diminutive variety, not exceeding 18 in. in height, rarely more than one stem, and may be planted in rows 18 in. asunder, the plants not more than 10 or 12 in. apart; consequently a great quantity may be placed on a limited space. It is very prolific, and has ripened thoroughly this season.

No. 10. *Cobbett's Early Corn*, which is nothing more than what is well known in America as the Nova Scotia Corn, grows about 3 ft. high, and may be planted in rows 2 ft. asunder, and the plants about 18 in. apart. It is an abundant bearer, as all the early varieties must necessarily be, from the expansion of their blossoms at a season when the high temperature insures a dispersion of the pollen from the stamiferous flower.

Having thus gone through this list, I have now to offer comparative estimate on the probable results of culture those varieties which may be considered available from their disposition to ripen in our climate, as co

with other articles of established usage, and with which practice has made us familiar; such as peas, beans, oats, or barley. Of course with wheat, as an article of growth for flour, it would be idle to waste time in the comparison; and here I may beg leave to correct an error of opinion which has prevailed among many since the introduction of it, as to its application in America, which is no less gross than to suppose it is the corn which yields the fine flour of that country, — an error so palpable as to require no refutation. It will not be practicable, within the limits of this article, to enter into details sufficiently at large to expose the fallacy of the attempt to substitute it for either of the above crops, as a part of a series in rotation on a farm of any extent; but it may suffice to show the probable result of it, as a part of a course of culture, as matter of profit, on the premises of its known properties and produce. To take, for instance, one acre on a soil peculiarly adapted to it, a friable loam; admitting it to give, as an average crop, fifty bushels to the acre, which, at the market price of it (usually in our markets 4s. per bushel), would be 10*l.* per acre. Now, if sown in May, the ground cannot be possibly cleared until November, which in most situations would be too late to get the ground ready for wheat; consequently it must remain idle until March following, if intended for oats, or, by a process of winter fallow, for spring wheat or barley, thus consuming eighteen or twenty months for two crops: whereas, if peas were sown in February or March, they will generally be harvested and marketed in July or August following, and the ground sown with turnips, which may be again cleared off in October and November, by which process the land is immediately available for wheat, at all times the staple crop of our farmers. In comparison of value as to produce, compared with peas, maize possesses no advantage; the general produce of grey peas is six or seven quarters the acre, which at 36s. per quarter, will yield more than the Indian corn, and certainly leave the ground in a much better state for the next crop, as it is notorious that maize exhausts the soil, whereas peas and turnips are considered an ameliorating crop. To pursue the comparison with regard to barley, which may be sown in May, harvested in August, and the ground prepared immediately for wheat; the produce of barley on soils adapted to Indian corn may be taken at an average in good seasons (equally necessary to the perfection of both), at seven quarters per acre, which, at 30s. per quarter, would yield an equal profit. Beans, for the use of which it may also be substituted as horse food, as with oats, are generally cultivated on soils not at all adapted for the culture

of Indian corn : deep heavy loam, inclining to clay, may be sown or planted in February and March, and reaped in August and September ; again leaving, in ordinary seasons, time to prepare if necessary for wheat, or to get the land in condition by a winter fallow for spring use, which it is hardly possible to do with maize, which can rarely be cleared before the end of November, or sometimes later ; consequently the ground must in ordinary cases remain untouched throughout the winter, which has the effect of rendering it unfit for early spring use, being usually in such cases churlish and heavy, instead of being friable and easily broken down when exposed to the action of the weather. As to any other advantages it may possess, as yielding a greater quantity of forage, I think it may be proved to be equally unavailable. Barley straw, of which two to three loads per acre are generally obtained, is particularly valuable, more especially when the ground is sown with clover as a secondary crop. Oat straw, in equal quantities or more, is alike valuable to the farmer, as fodder, or for sale ; peas halm, when well harvested, is considered fit for all cattle ; bean halm is, when got in good condition, made available for farm horses in all cases ; so that the superabundant herbage which the maize yields would afford no better profit to the cultivator than either of those I have compared it with.

Having thus given my opinion as to its relative merits as an article of agriculture, it remains but to show how far it may be made extensively useful as a garden crop, and certainly it could only be with the smaller varieties that any attempt should be made ; for few gardeners could spare more than twenty rods of space for its production, which, under the most favourable calculation of its produce, would not yield more than eight or ten bushels, which, even at 5s. per bushel, would afford but a poor return for the application of so large a surface during a period of six or eight months. As an article of summer produce for the table it is as yet but matter of curiosity or speculation with a few, and it would require two more seasons at least to determine its relative value to the gardener, as compared with the product of other vegetable crops. By these observations I do not mean to detract from its real value, or by any means to prevent its having a fair trial ; but merely to correct any erroneous opinions that may have been established in its favour, and which might, like all other extravagant calculations, be the means of great disappointment, and lead to very strong and irremediable prejudice against it. I must not omit to mention, that an extensive lection of Indian corn has been cultivated by Mr. Wm. An

son at Chelsea, for M. Lagasca, who brought the seeds from Spain. Out of 130 varieties, about forty vegetated, twenty or thirty of which have perfected seeds sufficient for their increase, but by no means in so great a quantity as to enable me to form an estimate of their value. It is true they were planted so late as June, but they have had all the advantages of a favourable position on a warm border under a wall, with every attention. Mr. Anderson considers them inapplicable to our purposes in ordinary seasons, and supported by such an authority, I have but little hesitation in considering it matter of very doubtful issue, which time and a better acquaintance with the plant, or an improved method of culture may alone be able to remove. If you consider these observations as at all conducive to the generally useful purposes of your Magazine, I shall be very happy in having been able to contribute them.

G. C.

Great Russel Street, Covent Garden,
October 31. 1829.

A gentleman from Sydney, now in London, who has cultivated the Indian corn there for two years, informs us that the stems grew with him 11 and 12 ft. high, with only one ear at top: two ears on the same stem are quite a rarity at Sydney. The utmost produce that he obtained was 50 bushels an acre. It appears highly probable, therefore, that some of the dwarf varieties of maize would prove much more prolific in New South Wales than the tall varieties at present grown there. The hint may be worth the attention of those going to the Swan River. Probably the varieties would soon degenerate, but the seed could be renewed from Europe or North America. The grains of maize will retain their vegetative powers for at least six years, so that a stock of seed might be kept on hand. We ascertained the fact of this degree of durability of the vegetative powers of the seed of the maize from a lady who resides at Hampstead, whose very interesting communication on the subject will appear in next Number.

After observing all the different accounts of the crops of maize which have appeared in the newspapers, particularly in the *Farmer's Journal*, the *Country Times*, and in Cobbett's *Register*, in the course of this very unfavourable season (1829), the conclusion we have come to is, that maize may be worth cultivating to a limited extent, for feeding poultry, on dry, warm, sandy soils, and in cottage-gardens, south of York. We do not like the bread or the pudding made from it, either alone or with wheat flour, and should be sorry to see it in general use as food for man. We do not think maize meal at all comparable with oatmeal; though that may be prejudice. But we know, from what we have seen in France and Germany, that the grain, entire or broken, is a rapid fattener of geese and other poultry; that the tops of the stalks and the leaves are greedily eaten by cattle; that, in Italy, the chaff is an excellent substitute for feathers in beds; that, the plant being cultivated in rows, and requiring frequent movement of the soil and to be kept very clear from weeds, it is a cleaning crop; and that, the grain having no gluten, it might probably alternate well with wheat. On dry, warm, sandy soils, such as at Sandy, in Bedfordshire, where Mr. Moore raised at the rate of 105 bushels per acre (*Farm. Jour.*, Nov. 9. 1829), we believe it will be found a profitable crop. — *Cond.*

PART II.

REVIEWS.

ART. I. *Memoirs of the Caledonian Horticultural Society.*
Vol. IV. Part II.

(Continued from Vol. V. p. 444.)

21. *On the Raising of Mushrooms during the Winter Season.* By Mr. A. Kelly, Gardener to the Earl of Moray, at Donibristle. Read June, 1818.

AN Oldaker mushroom-house is made use of. The dung preferred is "one half horse droppings, and one half short litter, from horses fed upon hay and oats, always avoiding dung of horses fed upon soft food." A sufficient quantity of this mixture is procured and thrown into a heap to heat, sometimes mixing one fifth or sixth of sheep or cow dung. The dung being turned once or twice, and in good heat, it is thrown into the shelves or boxes, and beat as firm as possible, till within an inch of the height of the front of the shelf, the shelf being 1 ft. deep.

"During the process of making up the beds, the heat of the dung will abate; but, by lighting a fire in the adjoining furnace for a short time, it will readily return. If it return strong, or become violent, I bore holes quite through the bed, to let the heat escape, and admit air freely into the house. These holes, by being filled up to within 3 in. of the surface of the bed, answer for putting the spawn into. As soon as the heat becomes mild, I spawn the bed with pieces of spawn about the size of common plums, placing the pieces about 9 in. or 1 ft. distant from each other, and covering them 1 in. below the surface of the bed. I have sometimes put on the mould directly after spawning, when there was no danger of the heat returning strong; but, in general, I defer this until the spawn has spread itself through the dung, which I think answers better. I have tried different kinds of mould for mushroom beds, and what I have found to answer best is lightish loam, mixed with a small proportion of horse droppings or road scrapings. I find road scrapings, when they

can be got dry, and from roads where horses have frequented, to form an excellent composition for covering mushroom beds. I put the mould on the beds 1 in. thick, beating it firm and smooth. This finishes the bed to the height of the front of the shelf, or 1 ft. deep."

The air of the house is now kept from 55° to 60°, and in about three or four weeks the mushrooms begin to appear. If the beds are dry on the surface, a moderate watering is given with water of the same temperature as that of the house. This will generally send up the mushrooms in great numbers. "The admission of air into the house at this time is very beneficial. By admitting much air, the mushrooms will not advance so rapidly in growth; but they will be much firmer, and of higher flavour, than if kept close shut up. I use no covering for my beds." The beds, on the whole, must be kept rather dry than moist; and much of the success depends on avoiding the two extremes of humidity and drought. Too much moisture and dampness are the general causes of the destruction of mushroom beds.

22. *On destroying Slugs, Lìmax cinereus and agréstitis.* By Mr. A. Gorrie, C.M.H.S., &c. Read June, 1818.

Mr. Gorrie discovered by accident that not only are slugs destroyed by the urine of black cattle, or the drainings of a cow-house or of dunghills, if poured on them, but the approach of others to the ground so moistened prevented for a considerable time. The drainings of the cow-house may be diluted with about one third of water.

(To be continued.)

ART. II. *Catalogue of Works on Gardening, Agriculture, Botany, Rural Architecture, &c., published since August last, with some Account of those considered the most interesting.*

BRITAIN.

Curtis's Botanical Magazine, or Flower-Garden displayed; New Series. Edited by Dr. Hooker. In 8vo Numbers, monthly. 3s. 6d. col.; 3s. plain.

No. XXXIV. for October, contains

2938 to 2943. — *Cypripedium macranthon*. Beautiful showy purple flowers. From open places or woods in Siberia; and sent by Dr. Fischer of Petersburg, to the Glasgow botanic garden. — *Ficus rubiginosa*. A small stove tree, from New South Wales, in 1789, by Sir Joseph Banks. — *Gaillardia aristata*; *Compositæ*. A tall branching herbaceous plant, with large showy yellow flowers, from the Rocky Mountains in North America by Mr. Douglas and others. — *Linaria æquitriloba*; *Scrophularinæ*. A pretty little tufted perennial, from the rocks at Laconi, in Sardinia, by the

German Travelling Society noticed in a former Number of this Magazine, to Dr. Graham, in 1828. — *Aster salsuginosus* (*salsugo*, fluid in salt pits). Perennial; about a foot high, with purple flowers in May. From the Salt Plains of the Athabasca, North America, by Mr. Drummond, to the Glasgow botanic garden. Dr. Hooker observes, "This might rather be called the *Spring* than the *Michaelmas* daisy." — *Peperomia clusiæfolia*; Piperaceæ. A stove succulent; an inhabitant of our stoves since 1793, when it was introduced from the West Indies by Captain Bligh. It is often confounded with the *Piper obtusifolium* of Willdenow.

No. XXXV. for November, contains

2944 to 2949. — *Combrètum grandiflorum*. A splendid climber, from Sierra Leone, "discovered by Mr. G. Don while collecting for that inestimable [!!] institution, the Horticultural Society." — *Pentstemon græcilis*. (The description, according to Mr. Lindley, is that of *P. glaucum*, *Bot. Reg.*, 1286.) — *Vicia argentea*. — *Habenaria macræceras*. One of the most curious of the terrestrial Orchideæ. Sent by Dr. Distan to the Glasgow botanic garden from Jamaica. — *Stanhopea* (in compliment to the Right Honourable Philip Henry Earl Stanhope, the noble president of the Medico-Botanical Society of London) *insignis*; Orchideæ. From South America to Kew some years ago. "Preeminent for its size, and the curious structure of the parts of its flower." In the *Botanical Register* for December, Mr. Lindley states that "the name above assigned to this plant cannot be retained, as it is a species of *Ceratophilus*, a genus long since published in Loddiges's *Botanical Cabinet*."

No. XXXVI. for December, contains

2950 to 2955. — *Ludovia** *latifolia*; Aröideæ. The habit of this plant, and especially of its foliage, is very similar to that of the palms: it inhabits Grenada, whence it was sent to Messrs. Loddiges. Whether or not it is hardy, is not mentioned. — *Lupinus littoralis*. A hardy perennial, flowering from June to October, and propagated by cuttings, divisions of the roots, and seeds. Introduced by Mr. Douglas from North-west America. — *Pothos microphylla*; Aröideæ. A stove perennial, from Brazil. — *Pentstemon præceras*. A handsome perennial species, from 18 in. to 2 ft. high. — *Maxillaria squælens*; Orchideæ.

Edwards's Botanical Register. Continued by John Lindley, F.R.S. L.S. &c., Professor of Botany in the London University. In 8vo Numbers, monthly. 4s. coloured.

No. VIII. for October, contains

1269 to 1275. — *Fuchsia microphylla*; Onagrariæ. A small densely leafy shrub, from the "volcanic mountain Jocullo, in Mexico, where it was found growing by Messrs. Humboldt and Bonpland at the height of between 3000 and 4000 ft. above the level of the sea. It has been recently raised in this country by R. Barclay, Esq., of Bury Hill, and Mr. Mackay of the Clapton nursery. As a garden plant, this is, in our estimation, by far the most interesting species in cultivation; destitute, indeed, of the glaring colour and nodding flowers of *F. græcilis* and *coccinea*, but possessing a rich deep green foliage; among which the little, glowing, ruby-coloured flowers are crowded in the greatest profusion. Like all the species hitherto known it is strictly a green-house plant. It will thrive out of doors in a warm summer, but it cannot bear much frost; and must, to be kept in health and beauty, be nursed in the winter as other green-house plants are. It increases

* "This genus was named *Carludovica* by Ruiz and Pavon, in honour of Charles XI. of Spain and his queen Louisa. But such a word was wholly inconsistent with the rules for constituting genera, and Persoon changed it to *Ludovia*."

rapidly by cuttings, and will soon be as common as the other kinds." — *Pentstemon speciosa*; Scrophulariæ. "A fine perennial species, native of the banks of the Spokan river, in North-west America, whence it was sent by Mr. Douglas to the Horticultural Society in 1827. It flowered in the Chiswick garden from June to September. In consequence of the great number of flowering stems and flowers which this plant produces, it increases little by the root; so that its propagation will depend upon the saving its seeds, which are brought forth in abundance. It is quite hardy, and grows in common garden soil." — *Acæna pinnatifida*; "Diándria, Triándria, Tetrándria, Pentándria, &c.; Mono-di-gýnia." [So much do the stamens sometimes vary, and hence sometimes the difficulties of the Linnean system.] Rosæcæ § Sanguisorbeæ. "A half-tender herbaceous plant, native of Chile, where it was first found by the authors of the *Flora Peruviana*, by whom it has been figured and described in their great work. The introduction of it to the gardens of this country is due to the Horticultural Society, in whose collection at Chiswick it had been raised from seeds collected in Chile by Mr. M'Rae. It is increased by cuttings of its half-woody leafy stem, or by division of the roots, or by seeds. During the summer it grows well in the open border, but it will not live there in the winter. This genus offers an illustration of what is called the certainty and precision of the Linnean system of botany, which is highly amusing. Perhaps some of our friends at Liverpool, the last strong-hold of the remnant of the followers of the great Swedish naturalist, will inform us to what Linnean class *Acæna* should be referred." — *Thermopsis* (*thermos*, a lupine, and *opsis*, the appearance; general aspect) fabæcæ (*faba*, a bean; general aspect); Leguminosæ § *Sophoræcæ*. A perennial herbaceous plant, remarkable for the neatness of its trifoliate or quinate leaves, and bright yellow lupine-like flowers. Found in the north-eastern side of Asia, by the Russian collectors; and in dry channels of mountain torrents in the valleys of the Blue Mountains, by Mr. Douglas. — *Tabernæmontana densiflora*; Apocýnæcæ. A stove shrub, from India, by the East India Company to the garden of the Horticultural Society. — *Ribes tenuiflora*; Grossulæcæ. A low North American shrub, often confounded with *Ribes aureum*. — *Lissanthus* (*lissos*, smooth, *anthos*, a flower; polished surface of the corolla) sápidus. A handsome green-house shrub, from New Holland to the Clapton nursery. In the *Library of Entertaining Knowledge* it is called the Australian cranberry. The fruit is a succulent drupe, and said to be of a very delicate peach-bloom colour, having something of the consistency and taste of the Siberian crab.

No. IX. for November, contains

1276 to 1283. — *Cánna speciosa*. "A stately and ornamental species, from the valley of Nepal, flowering and ripening its fruit there almost all the year round." — *Pentstemon Scouleri*. From the Kettle Falls of the Colombia by Mr. Douglas. "In its native country it is half-shrubby, and would be the same with us in warm situations: it is, however, best considered as a perennial. It is very hardy, will grow in any soil, and propagates abundantly either by seeds or cuttings. It blossoms in May and June, and is one of the handsomest border flowers of that season. The species was named by Mr. Douglas in honour of Dr. Scouler, the companion of his voyage to the west coast of America; who has, we understand, been recently appointed to the chair of natural history in the university of Glasgow." — *Ribes punctatum*. A neat shrub, with berries about the size of those of the red currant. From the high hills of Chile. Rather tender. — *Gesneria rutila* var. *atrosanguinea*. From Rio Janeiro, from Mr. J. McCulloch, gardener to the Right Honourable Robert Gordon, by whom it was presented to the Horticultural Society. — *Pentstemon pruinosa*. A neat plant, with brilliant flowers. From the Colombia, by Mr. Douglas. "It is perfectly hardy, and perennial; but, like many of the newly introduced

species of this genus, is apt to exhaust itself so much in flowering, as to become little better than a biennial. This may, however, be prevented, by pinching a part of the flowering stems of each plant upon their first appearance; a practice which may be advantageously adopted with regard to all plants having similar habits. It should be cultivated in a shady place in some light soil, in which it will flower beautifully during all June, July, and August, ripening seeds in tolerable abundance." — *Ipomopsis elegans*; *Polemoniaceæ*. A beautiful biennial or perennial, with scarlet funnel-shaped flowers. From both sides of the continent of North America, by Mr. Douglas to the Horticultural Society. "It is, unfortunately, impatient of cultivation, being apt to die off, without apparent cause, during its flowering. Naturally, it is perhaps perennial; but with us, owing to this cause, it does not survive beyond two years. The best method of cultivating it is found to be in cold damp soil, under a wall. It will not live in peat or light soil." — *Lophanthus anisatus*; *Labiatæ* § *Saturineæ*. A handsome hardy perennial, from the Missouri, flowering profusely in July, August, and September, and remarkable for the strong scent of anise which it yields when slightly bruised. Flowers, blue and red. — *Sisyrinchium odoratissimum*; *Irideæ*. From South America to the Clapton nursery, where it is perfectly hardy. "We have here a new instance of what is called the *certainty* and *precision* of the Linnean system of botany. *Sisyrinchium* appears to us to belong to *Monadelphica Triandria*, and it is so stationed by some Linnean botanists: yet others, of great authority, place it in *Triandria Monogynia*. We will not pretend to decide between these conflicting opinions; but we really wonder that gentlemen should be still found, with this and hundreds of similar cases staring them in the face, to talk gravely of the peculiar *precision* and *certainty* of the sexual system. No one pretends to claim this character of peculiar *certainty* and *precision* for the natural system; but to ascribe it exclusively to the Linnean is notoriously absurd; as if the very clever artificial contrivance of the illustrious Swede, the utility of which is, however, most extravagantly overrated, were exempt from the imperfections inherent in all human affair. But what amuses us the most is, that while Linnean botanists are thus anxiously endeavouring to maintain the ground which they cannot perceive is rapidly slipping from beneath them, they are silly adopting the very system they deprecate, and adopting it by a sort of patchwork process which has the peculiar advantage of being particularly useless. (See *Spiegel's Syst. Veg.* passim, in the arrangement of genera.) With us, so completely will prejudice blind men's perceptions, one of the most intelligent and amiable men that the age has seen has announced himself a defender of the Linnean faith in a splendid work, bearing for its name the somewhat singular title of '*Monandrian Plants of the Order Scitamineæ!*' which, written, from beginning to end, upon the principles of the natural system, no other country than Great Britain would remarks of this nature be necessary, if we except a few of the southern kingdoms of Europe, in which science does not particularly flourish. We trust they will soon be fluorous among ourselves."

No. X. for December, contains

1284 to 1289. — *Fuchsia thymifolia*, *Lopezia thymifolia* of W. "A half-hardy shrub, remarkable for its soft entire leaves and ch flowers, the petals of which are not rolled together, as is usually but spread open. The blossoms are at first pale-greenish rose and gradually changing to deep red; so that there are many different h the plant at the same time. It propagates very readily by cut will soon become a common plant. It flowers continually dur summer months." — *Pentstemon acuminata*. "A rival of the l speciosa, inferior to it in stature, but exceeding it in beauty of col

neatness of appearance." From the sandy plains of Colombia, by Mr. Douglas. It flowers from June to August. "This is by far the most difficult to cultivate of all its genus. No soil has yet been found which suits it. It flowers abundantly, but will not produce seed. It is to be feared that unless we have a fresh supply from North-west America, the species will be lost to our gardens." — *Pentstemon glauca*. "A dwarf species, thriving in common soil, flowering in profusion in August and September, and propagated by division of the roots and by seeds. It grows about a foot high." — *Isopogon formosus*; *Proteaceæ*. "A green-house shrub, remarkable for its hard, neat, rigid, divided leaves, and heads of purple flowers. Propagated by ripened cuttings, struck under a bell-glass. It blossoms in July. This plant, the most beautiful of its genus, is said to have been introduced so long since as the year 1805, to the Kew garden. As far, however, as the public is concerned, the date of its introduction may be more properly fixed in 1824, when it was raised by Mr. Mackay, from seeds collected in the neighbourhood of Lucky Bay by Mr. Baxter, on his first visit to the west coast of New Holland. It is right that in all questions about the period at which plants have been introduced, this distinction should be borne in mind, and that the world should be aware that the introduction of a plant to His Majesty's garden at Kew is a very different affair from its introduction to Great Britain. An object cannot be properly said to be introduced from one country to another, unless it is afterwards disseminated by such means as the introducer possesses; a practice which is adopted in every establishment in the world, save in that one which ought to set an example to all others." There is not a botanist or gardener who has a spark of liberality or independence of mind who will not agree with Mr. Lindley in the above observation. The whole system and management of Kew gardens, as we have often stated, have long been, and still are disgraceful to a free, enlightened, and liberal people. — *Stachys germanica* var. *pubescens*. — *Microstylis* (*mikros*, small, *stylis*, a column; small size of the column) *ophioglossoides* var. *mexicana*; *Orchideæ*. — *Dendrobium secundum*; *Orchideæ*. "It appears, from Dr. Wallich's drawings, to be a most lovely species in its native places of growth, forming long pendent stems, which throw out an abundance of one-sided racemes of purple flowers, 5 or 6 in. long. The habit of this and many other dendrobiums being to hang down from the trees on which they grow, it is impossible to cultivate them with any success, unless they are suspended in the air in pots, or otherwise so managed that they can shoot freely in the way that is natural to them."

Botanical Cabinet. By Messrs. Loddiges. In 4to and 8vo Parts, monthly. Large paper, 5s.; small paper, and partially coloured, 2s. 6d.

Part CXLVIII. for August, contains

1471 to 1480. — *Viola sagittata*. — *Erica australis*. — *Leontice thalictroides*. — *Orthrosanthus multiflorus*. — *Camellia japonica*. Very like *anemoneflora crassinervis*. — *Viburnum obovatum*. — *Euphorbia lophogona*. From the Jardin du Roi, where it was lately raised from seeds received from Madagascar. — *Leucojum pulchellum*. — *Grevillea rosmarinifolia*, *Prímula decora*.

Part CXLIX. for September, contains

1481 to 1490. — *Aloe humilis*. — *Cochlearia danica*. — *Scilla italica*. — *Blighia sapida*; *Sapindaceæ*. A native of tropical Africa, brought to the West Indies in 1778, by Admiral Bligh, where it is now become naturalised, and the fleshy cover of the seed used as a delicate article of cookery. The tree in Messrs. Loddiges' stove is 20 ft. high. — *Viola dentata*. — *Ribes alpinum*. A stout bush, 4 or 5 ft. high, from the mountainous woods of the north of Europe. — *R. sanguineum*. A hardy shrub, from the Colombia river, with a profusion of beautiful red flowers in April. — *Hovea Celsi*. An elegant plant for a conservatory, but it will not thrive long in a pot. Scarce,

because it is difficult to propagate.—*Dodecâtheon Meádia flore álbo.*—*Diósma sphærocéphala.*

Part CL. for October, contains

1491 to 1500.—*Rhododéndron Chamæcístus.* “A charming production of the Great Author of all good,” from the mountains of Carniola, to the Hackney botanic garden, in 1786, by the Baron von Zois. “It is a most delicate little plant seldom exceeding 3 or 4 in. in height, flowering with us in May. We increase it by cuttings. The soil should be peat, and in winter the plants may be kept in a cold frame, or under a hand-glass. In summer it should be placed in a shady situation, and moderately watered.—*Pulmonària móllis.* A hardy perennial from Transylvania, in 1816.—*Caméllia euryòides.* A slender shrub, with pendulous hairy branches, and white flowers from the axils of the leaves in April, not very conspicuous.—*Andrómeda buxifòlia.* A most elegant little shrub, from the mountains of the Island of Bourbon, by Mr. Barclay of Bury Hill. “With us it flowers from April to July, growing from 1 to 3 ft. high; the leaves are of a strong ever-green texture, and the flowers exceedingly beautiful. It is preserved without difficulty in the green-house, and may be raised from seeds, which are perfected in this country. The soil should be sandy peat.—*Erica flexuòsa.*—*Onònis rotundifòlia.*—*Alstrœmèria bícolor.* “Raised in 1826, among some of the *A. trícolor*, of which it is a kind of variety.”—*Diósma rùbra.*—*Potentílla alpéstris.* A very brilliant and showy species, from the Alps of Switzerland.—*Oxalis Déppei* (in honour of Mr. Deppe, a German naturalist and collector, now on his second expedition to New Spain). Introduced from Mexico by Mr. Barclay.

Part CLI. for November, contains

1501 to 1510.—*Hakea ferrugínea.*—*Dillwýnia púngens.* An elegant New Holland shrub, introduced in 1825, by Mr. Mackay.—*Aphyllánthes monspeliénsis.*—*Aloe incúrva.*—*Erica cinèrea.*—*Iris taúrica.* Raised in 1826, from seeds received from Dr. Fischer of Petersburg. The plant grows only a few inches high, and produces yellow flowers in May.—*Fothergílla Gardèni.*—*Kálmia glaúca.*—*Persoónia latifòlia.* A New Holland shrub, 3 ft. high, with small yellow flowers in June and July.—*Saxífraga decípiens.*

Part CLII. for December, contains

1511 to 1520.—*Schelhammèra multiflòra*; *Polygonâteæ* (?). An herbaceous plant, from New Holland, 2 ft. high, with pendulous shoots and delicate pleasing pale red and white flowers. “It increases itself by suckers from the root, which are freely produced, and should be potted in loam and peat earth, and preserved in the green-house during the winter months.”—*Cotoneáster frígida.* From the northern regions of Nepal, by Dr. Walli. “It forms a handsome small bushy tree, growing very freely, and is perfectly hardy, flowering with us in May and June. One specimen, planted 14 years since, is already nearly 10 ft. high. It seems to thrive in any tolerable good soil, and has been increased by budding on the whitethorn stock.”—*Tradescántia elàta.*—*Verbèna Melíndres* Bot. Reg. (*chamædriòides* S.)—*Sempervívum cæspitòsum.*—*Cérbera dichótoma.* A tree from India with fine, smooth, green, obovate leaves, and beautiful white flowers. highly ornamental to the stove, may be increased by layers.—*Saxífraga nudàta.*—*Azàlea viscòsa rubéscens.*—*Erica capitàta.*—*Fothergílla*

The British Flower-Garden. By Robert Sweet, F.L.S. &c. In 8vo N^o 1 monthly, 3s.

No. V. for October, contains

17 to 20.—*Cobúrgia* (“We have named the present handsome genus in compliment to His Royal Highness Leopold, Prince of Saxe Coburg, who is much attached to botanical science, and the bulbous-rooted plant particular, in whose collection at Claremont, several rare ones have flourished for the first time in this country.”) *incarnàta*; *Amaryllidææ*, *tribe 2* *trifórmes Herbert.* A grand and very distinct genus; the drawing

a bulb in full flower in Mr. Knight's exotic nursery, King's Road, Chelsea, who received it from Quito in Peru two years ago. "It was first discovered by the noted travellers, Humboldt and Bonpland, who found it growing on the banks of the river Machangara, near Quito, at the altitude of 8910 ft. above the level of the sea; so that there can be no doubt but it will prove sufficiently hardy to endure our winters, if planted about 6 in. deep in a warm border in a sheltered situation; a rich loamy soil, that is very sandy, will be most proper for it, and it would be the safest plan to cover it a little in winter, till such time as it has had a fair trial, as we suspect it is at present very rare, not having heard of it in any other collection; but when the bulbs get well established, there can be no doubt but they will ripen seed freely, as we perceived there were a great quantity of immature seeds, in a withered capsule, that did not come to perfection; the seeds appeared to have a membranous winged margin, in the young state that we examined them." — *Asclèpias púlchra*; *Asclepiàdeæ* *Asclepièæ*. A hardy herbaceous perennial, with dark purple and red flowers, from North America. It makes a handsome stately plant, "attaining to the height of 3 or 4 ft. in the common garden soil, and considerably more if planted in peat, continuing to produce an abundance of its curious purple flowers from July to the middle of September. The flowers of several species of this natural order have the singular faculty of catching flies, which are attracted to the flowers for the sake of the honey, which is produced in most of them in great abundance; and we have sometimes observed a few entrapped in the flowers of the present species, but not so often as in some others. It is readily increased by dividing at the root, or by seeds; the latter are produced in pods, embedded in cotton, as are those of the whole genus." — *Cœnothèra Lindleyàna*; *Onagràriæ*. "One of the most beautiful species." — *Cyclobóthra* (*kyklos*, a circle; *bothros*, a well or pit; circular pit in each leaflet of the flower of the other species) *purpurea*; *Tulipàceæ*. A bulb with a nodding flower, and branched stem 2 ft. high, bearing bulbs in the axils of the leaves. Imported from Mexico, by Mr. Tate of the Sloane Street nursery. Handsome. "Like the other species it thrives best in a light sandy soil, and will succeed well in a warm border, planted from 4 to 6 in. deep, according to the size of the bulb. These may be taken up in autumn, after flowering, and kept dry, and out of the reach of frost till the following spring, to be planted again the latter end of March or beginning of April, or before, if they are inclined to shoot; or, if left in the ground all the winter, they will require a little covering to secure them from too much moisture, or very severe frost."

No. VI. for November, contains

21 to 24. — *Uvulària pubérula*; *Melanthàceæ*. "Rare and pretty." From Carolina to Bury Hill garden. — *Georgina Cervantèsii*. Readily distinguished from all the other species of the genus by its "numerous slender branches, which are nearly solid: the spathulate seeds will also distinguish it at once from *G. crocata*, as well as the hollow fistulous stem of that species. According to Lagasca, the *G. coccínea* and *G. ròsea* of Cavanilles are also very distinct species; the *G. ròsea* is readily distinguished from *G. variàbilis*, to which it is nearly related by its bipinnate leaves. We have seen a few plants of it this season, and some of them producing double flowers; we have also seen, at Mr. Russell's nursery at Battersea, a beautiful double variety of the present species. This species requires precisely the same sort of treatment as the more common sorts: to be taken up, and kept dry and out of the reach of frost all the winter; and to be planted again as soon as the weather permits in spring, when it may be increased by dividing in several parts, or it may be raised from seeds, which ripen in abundance. — *Diànthus Balbísii*. A beautiful dark red pink, from Genoa. — *Asclèpias decúm-bens*. A handsome and scarce species, nearly related to *A. tuberòsa*.

No. VII. for December, contains

25 to 28. — *Fúchsia thymifòlia*. — *Nócca* (D. Nocca, an Ital. bot.) *rígida*;

Compositæ. A half-hardy perennial, from Mexico, very fragrant when in flower; attaining the height of 10 ft. in common garden soil, by the side of a wall, and readily propagated by cuttings planted under a hand-glass in spring. — *Diánthus pubescens*. "Interesting, beautiful, and superb." From Smyrna, to the Epsom nursery. — *O'robis variegatus*. A handsome perennial.

Geraniaceæ. By Robert Sweet, F.L.S. &c. In 8vo Numbers, monthly. 5s.

Nos. XVI. to XVIII. for October, November, and December, contain
61 to 72. — *Pelargonium perampulum*. — *P. bipinnatifidum*. A seedling, by Mr. Chandler; singularly handsome, and supposed to be a hybrid between *P. quinquevulnerum* and *P. triste*. — *P. Darnleyanum*. Raised by Mr. Samuel Andrews, gardener to the Earl of Darnley, Sandgate, Kent. — *P. anacamptum* (*anakamptos*, recurved), Recurved-calyxed Stork's-bill. A hybrid, from Russell's Enham nursery, Battersea. — *P. insculptum*, *nütans*, *præclarum*, and *nodosum*. — *P. succulentum*, *compactum*, *commixtum*, and *Littleanum* (from Mr. Little's collection in the King's Road, Chelsea).

Cistineæ. By Robert Sweet, F.L.S. &c. In 8vo Numbers, every alternate Month. 3s.

No. XXVI. for September, contains

101 to 104. — *Heliánthemum Millèri*. — *H. thymifolium*. A very pretty little dwarf plant, with yellow flowers. — *H. macranthon*. A strong-growing, very handsome, white-flowered species. — *H. m. var. multiplex*. Same species, with double flowers; very handsome.

No. XXVII. for November, contains

105 to 108. — *Heliánthemum taúricum*. From the nursery of Messrs. Whitley, Brames, and Milne. — *H. mutabile var. rosea*. From the Clapton nursery. — *H. cheiranthoides*. A handsome, bushy, upright, branching shrub, from the Bristol nursery. — *H. ellipticum*. A pretty little species, from Barbary, raised from seeds in the Chelsea botanic garden.

The Botanic Garden. By B. Maund, F.L.S. &c. In small 4to Numbers, monthly. Large paper, 1s. 6d.; small paper, 1s.

Nos. LVIII. to LX. for October, November, and December, contain

229 to 240. — *Cýclamen còum*. "Very few admirers of the *Cýclamer* endeavour to increase any of them by seed; which must be regretted, both on account of the almost certain success which would attend their attempts and also from their comparative scarcity being hereby perpetuated. Many have probably been deterred from the practice, by an erroneous statement which has been copied from book to book, asserting that seedlings are five years before they flower. With proper management, they flower at five years old, and require no uncommon attention." (See *Gard. Mag.*, Vol. p. 386.) — *Aubrieta purpurea*. A desirable perennial, 3 in. high, with purple flowers in May. — *Prímula villòsa flore albo*. — *Silène acaúlis*. — *Vincetrigèlla*. — *Onósma taúricum*. Handsome and uncommon. — *Helónias bulbosa*. — *Magnòlia conspícua*. — *Sida malvæflòra*. — *Aster tenellus*. — *Amorcanthina*. A tonic and antiseptic. — *Andrómeda mariàna*.

Roscoe, Mrs. Edward, of Toxteth Park, near Liverpool: **Floral Illustrations of the Seasons**, consisting of Representations drawn from Nature of some of the most beautiful, hardy, and rare Herbaceous Plants cultivated in the Flower-Garden, carefully arranged according to their order of Flowering; with Botanical Descriptions, Directions for Cultivation. London. In 7 Royal 4to Numbers, each with 8 Plates, and 9 Pages of Letter-press. 9s.

This work is dedicated to William Roscoe, Esq., by his "affectionate daughter," as a mark of respect and affection, but more particularly in gratitude, for the warm attachment which has contributed so much to the

of her life. The object of the work is to place botanical subjects in an attractive form, and to attach to them useful and accurate information. The first Number contains illustrations of spring, by figures of *Crœus*, *Hepatica*, *Scilla*, *Narcissus*, *Erythronium*, *Adonis*, *Primula*, and *Sanguinaria*; the letter-press containing lists of other spring-flowering species of the same genera. Number II. illustrates summer by *Pœonia*, *Phlox*, *Anemone*, *Pulmonaria*, *Campanula*, *Ænothëra*, *Clarkia*, and *Potentilla*, with lists of other summer-flowering species. Number III. represents autumn by *Eschscholtzia*, *Catananche*, *Coreopsis*, *Georgina*, *Rudbeckia*, *Scabiosa*, *Lobelia*, and *Aster*, with lists as before. These are all the Numbers that are published. The figures are beautifully drawn, and perhaps, on the whole, not badly coloured; though we must say, that, considering the size of the figures, we expected something better. The artist might take a hint from the *Botanic Garden*, the *Botanical Register*, and *Horticultural Transactions*, comparing those plants figured in the three works; for example, *Crœus* with the group in the *Trans. Hort. Soc.* (*Gard. Mag.*, Vol. V. p. 516.), *Clarkia pulchella* with that plant in the *Botanic Garden*, and *Eschscholtzia* with that of the *Botanic Register*. The letter-press is every thing that such a work requires; and it gives us pleasure to know that the work has a good sale.

The Florist's Guide and Cultivator's Directory, &c. By Robert Sweet, F.L.S. &c. In 8vo Numbers, monthly. 3s. coloured; 2s. plain.

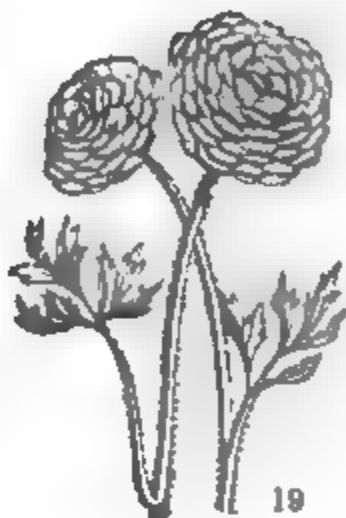
No. XXVIII. for October, contains

109 to 112. — Titian Tulip. — Painted Lady Anemone-flowered Georgina. (fig. 18.) "The present handsome variety belongs to a new tribe, known

by the name of Anemone-flowered amongst cultivators, the flowers having their centre composed of narrow radiated florets, like the small petals in the centre of the double anemone; we suppose they must have first originated by the common double being mixed with one known by the name of *astrantiæflora*, which would doubtless produce the present curious varieties. This race, from its great dissimilarity to the common double type, will make a very pleasing variety, and will doubtless be in general cultivation; grown amongst the other double sorts, we see in some of the varieties a tendency to produce large rays, intermixed with the smaller ones, some so much so, that they would scarcely be recognised as belonging to the tribe. They require precisely the same sort of treatment as the other double sorts; to be brought forward a little in pots in a frame, or in the hot-house or green-house, if convenient, and to be planted in the open ground as soon as possible, when there is no more apprehension of frost for the season; if planted in the open ground at once, without being brought forward at all by artificial heat, they will be much hardier, and may be planted out earlier, as the slight frosts will not injure them. We have seen them succeed quite well when planted out the latter end of March, or beginning of April, and have even known them stand the whole winter in the open ground without protection, but the winter was that season very mild; so that it is safest to take up the roots, and to keep them dry and out of the reach of frost till the following spring, when they may be increased by dividing the roots; but a part of the crown must be left to each root, or they will not produce a shoot. New varieties may be raised from seed to an endless extent, and superior ones may be obtained by taking pains in



mixing the colours by fertilisation when in flower. We observed, at Mr. Russell's nursery, at Battersea, a handsome double variety of *G. Cervantesii*, of a pretty orange-colour, and not unlike a double ranunculus; it is the first double variety of that species that we have yet seen. Mr. J. Lee, at Hammersmith, possesses a fine collection of this handsome tribe, having purchased the whole of the stock from Mr. Drummond, who first raised them." — *Nonpareil Ranunculus*. "Different cultivators (fig. 19.) vary very considerably in the time of planting their ranunculus roots, some putting them in the ground the latter end of this month, or the beginning of November, and others not planting any until February or March; and we believe if all the broad-leaved varieties were planted in autumn, and the narrow multifid-leaved varieties in spring, they would both succeed better than by planting them altogether, and at the same time; as the narrow-leaved sorts, without doubt originally a distinct species, are natives of a warmer climate than the broad-leaved sorts."



No. XXIX. for November, contains

113 to 116. — Young's Marquess of Winchester Pink. A very handsome new variety, sold by Mr. Hogg of Paddington Green at 5s. a plant, and "well deserving a place in every collection of pinks, from its large size, handsome form, and brilliancy of colours." — *Bijou de Clermont Carnation*. A very handsome scarlet bizard, now selling by Mr. Hogg at a guinea a plant. — *Dark crimson globe-flowered Georgina*. A pretty variety belonging to a distinct tribe, with globular-headed flowers. This tribe was raised about the same time as that with anemone flowers, and both are very ornamental, and form an agreeable variety with the common forms of georgina. — *Rose Camus de Craix Tulip*. From the choice collection of Mr. Pile, Cambridge Road, Mile End; selling price four guineas a bulb.

No. XXX. for December, contains

117 to 120. — *Aurora Georgina*, a variety of *G. Cervantesii*; "the first double variety that we have ever seen of that species, which makes it the more desirable." From Russell's Battersea nursery. — *Page's Lord Hill Auricula*. From the select collection of J. P. Burnard, Esq., of Formosa Cottage, Holloway, where the different varieties of auricula are flowered in the greatest perfection." — *Lancashire Hero Tulip*. — *Maria Louisa Ranunculus*

Medical Botany, &c. By John Stephenson, M.D., and James Morris Churchill, Esq., Surgeon. In 8vo Numbers, monthly, 3s. 6d.

No. XXXIV. for October, contains

133 to 136. — *Rumex Hydrolapathum*. By far the largest of our do. The roots strike a black colour with sulphate of iron, and give out the tringent principle both to water and rectified spirit. Seldom used in cine; but a decoction of *R. Paténtia* operates as a cathartic, and same time improves the tone of the stomach. — *R. Acetosa*. The acid the leaves is owing to the presence of superoxalate of potash, which extracted from them, and purified by crystallisation. The juice for water a refrigerant drink in fevers. For culinary purposes the *Fre* (*R. scutatus*) is generally preferred; but the Parisians consider *R. Flore Fran.*, as the most delicate of the species. — *Glycyrrhiza gl.* roots of the wild Jamaica liquorice (*Abrus precatorius*), "a beautiful shrub, resemble so much the true liquorice in appearance and qv they are often sold in India, and used as such." The liquorice in the neighbourhood of London, and in different parts of th

small quantities, and the roots sold to the brewers and druggists at from 2*l.* to 3*l.* per cwt. It is propagated by cuttings of the small roots, planted in light sandy soil, trenched three spits deep, in rows 3 ft. asunder, and the plants 18 in. apart in the row. A crop of onions, radishes, &c., may be taken the first year, but nothing of this kind during the second and third summers. At the end of the third summer the roots are taken up, trimmed of the side shoots, which are reserved for cuttings, moderately dried, and tied in bundles for sale. The extract is obtained by maceration in boiling water, then boiling, straining, and evaporating. It is prepared on a large scale abroad, and imported chiefly from Spain. The powder of liquorice sold in the shops is often mixed with flour. "Unlike other sweets, liquorice has had the reputation, from time immemorial, of allaying thirst, which property is attributed by Cullen to an acid and bitter matter, which follows the extraction of the sweetness by chewing. Under the form of extract it is in common use as a demulcent, in coughs and hoarsenesses; and is sometimes taken to relieve acidity of the stomach. It is also employed to cover the unpleasant taste of several bitter and nauseous drugs, particularly aloes and Peruvian bark." — *Marrubium vulgare*; Common Horehound. The active principles of this plant appear to be a bitter, extractive, volatile oil, and gallic acid. It is a popular remedy with the poor, is tonic, producing an increased flow of urine, and in considerable doses gently aperient. "The nostrum, sold as *Balsam of Horehound*, consists, according to Paris, of infusion of horehound and liquorice root, with double the proportion of proof spirit or brandy; to which is added opium, camphor, benzoin, squills, oil of aniseed, and honey. A remedy for consumption, forsooth!!" — *Veratrum album*; White-flowered Veratrum, or White Hellebore. A native of the mountainous districts in most of Europe from Norway to Greece, but not in Great Britain. In the Alpine pastures of Switzerland, this stately plant, accompanied by the *Gentiana lutea*, makes a magnificent appearance. The root, which is the part used in medicine, is tuberoso and ramose, with a disagreeable odour, and an acrid, nauseous, and bitter taste, "excoriating the mouth and fauces; while the powder, if applied to wounds, produces effects on the animal economy of a highly deleterious nature, the whole plant being in fact poisonous. If applied to the membrane lining the nose, it proves a violent sternutatory." In the chemical analysis of the root, a poisonous principle can be separated, and is known under the name of Veratrine. The same principle is discovered in every species of the genus, and also in the bulb of *Colchicum autumnale*. Taken in any form, the *Veratrum*, or White Hellebore, is a violent poison. In medicine it is applied in cases where it is necessary to excite quickly a strong action of the bowels. "When given with this intention, it has answered very well in the case of old people, when an enormous accumulation of feces existed in the larger intestines." It is employed, conjoined with opium, in gout, and was at one period considered the active ingredient of the *Eau Medicinale*.

No. XXXV. for November, contains

137 to 140. — *Anethum graveolens*. "Like the anise and caraway, the seeds of dill are carminative and stomachic;" as are also the seeds of fennel and angelica. — *Cucumis Colocynthis*, the Colocynth or Bitter Cucumber. This trailing annual is abundant in Turkey, and is "supposed by many to be the plant described in the subjoined passage of holy writ: — 'And one went out into the field to gather herbs, and found a wild vine, and gathered thereof wild gourds his lap full, and came and shred them into the pot of pottage: for he knew them not. So they poured out for the men to eat. And it came to pass, as they were eating pottage, that they cried out, and said, O thou man of God [herbalist?], there is death in the pot. And they could not eat thereof.'" Given in over-doses, it acts as a drastic purgative, to such an extent as to bring on delirium; which, after a time, goes off by drinking

milk. "No cathartic is more highly prized, nor oftener used." — *S. Russelliàna*. The bark of this species, and of *S. álba* and others, contains tannin, and, it is said, has been found useful as a substitute for cinchona. The *S. Russelliàna*, or Bedford Willow, is the most profitable for cultivation of any species of the genus, not only on account of its timber, but also of its bark, its rapid growth, and its handsome aspect. The Huntingdon Dishley, and some other species, come very near it. — *Vitis vinífera*.

No. XXXVI. for December, contains

141 to 144. — *Juníperus communis*. "The leaves of the juniper are balsamic and agreeable; to the taste resinous, and somewhat bitter. The berries have a very agreeable odour, are soft, warm, and bitterish. They contain sugar, mucilage, a small quantity of light essential oil, of a white yellow colour, possessing the flavour of the juniper, and a strong smell. A writer in the *Jour. Pharm.*, 1827, p. 215., asserts that the berries contain an essential oil before their maturity, turpentine when ripe, and a resin which dries on the tree. Most of those which are used in this country are brought from Holland and Italy; and they should be chosen fresh, not much shrivelled, and free from mouldiness. The Italian resin is called gum sandarach, or vernix, as it is commonly called, is an exudation from the *J. communis*, growing in warm climates; though that which is generally met with in commerce is the produce of the *Thuja articulàta*, or Joint Arbor-vitæ. It is commonly used as pounce. Medically, juniper berries are carminative and diuretic; and given in the form of infusion, combined with other medicines of the same properties, will often be found to act freely on the kidneys. This virtue of the berries depends on their essential oil; and as the tops of the plant also contain it, they are sometimes used. The wood is considered to be sudorific, and has been occasionally substituted for guaiacum and sassafras. Linnæus states in his *Flora Lappónica* that a decoction of juniper berries, when fermented, is used in Sweden as a common drink; but the assertion of some writers, that it is substituted for tea and coffee, he contradicts." — *Juníperus Sabina*. The leaves and berries "give out a great part of their active matter to watery liquors, and the whole to rectified spirit; tinging the former of a brownish, and the latter a dark green, colour. Distilled with water, they yield a large quantity of essential oil, on which the activity of the plant depends. Savin is a powerful stimulant, and was once much employed as an emmenagogue. A strong decoction of the powder has often been given in large doses, with a view to procure abortion; but if it be capable of producing such an effect, it is very doubtful, it is when it acts as a hydragogue purgative." — *Euphorbia officinàrum*. A prickly lactescent shrub, from Africa. The cup of the shops is obtained by making slight incisions in the plant, from which exudes a milk-like juice, that concretes into oblong or roundish tears. This substance excites an extremely violent local action: solid, or as a powder, it proves highly acrimonious, inflaming and ulcerating; as powder, it is the most violent errhine that we possess. When a minute portion is mixed with powdered starch, and taken as snuff, it has, like the powder of *europæum*, been found useful in various affections of the head. The other species of *Euphórbia* possess similar properties. The *E. Láthyrus*, or Caper Spurge, have lately been proposed as a substitute for the root cacuanha, and the oil expressed from them as a substitute for *Cròton Tiglium*. *E. Ipecacuánha* is both emetic and cathartic. *E. helioscòpi*, or Wart-wort, is used in many parts as a stimulating agent for destroying warts and other excrescences. Two drachms of pressed juice of this species killed a kitten in half an hour. — *E. marítimum*. "Eryngo root has a sweet agreeable taste and it gives out its properties to water. This root was for

to be possessed of many virtues. Boerhaave reckons it as the first of aperient diuretic roots, and it has been recommended in gonorrhœa and visceral obstructions, particularly of the gall-bladder and liver. Menstrual suppressions are reported to be removed by it, and quartan agues are likewise stated to have yielded to it. To crown its other virtues, it is much esteemed for its supposed aphrodisiac qualities; and at Colchester, where the candied root is prepared, considerable quantities of it are still sold, we are informed, in consequence of Her Majesty Queen Charlotte being presented with a box of it, as she passed through that town on her first arrival in England. It is now little used by medical practitioners; but while we are taught to believe by respectable authorities that two grains, and even one, of blue pill for a dose, can act beneficially on the system, we see no reason why this root, and many others, should be destitute of all virtue, when properly administered and judiciously persevered in, even though their direct effects on the system manifest themselves in no very evident manner. The *E. campéstris*, or Field Eryngo, with deeply divided leaves, which grows naturally in our meadows and pastures adjoining the sea, is said to possess the same qualities and medical properties, and is preferred on the Continent." — *Geoffrøya inermis*; Leguminosæ. The smooth Geoffroya, Bastard Cabbage tree, or Worm Bark tree, is a native of Jamaica and Martinique: it is lofty, with white wood, which is so tough as to be preferred beyond all others for the shafts of carriages. The bark is used as a worm powder in the West Indies; but, though included in our *Materia Medica*, is very seldom prescribed.

No. XXXVII. for January, 1830, contains

145 to 148. — *Dorstènia Contrayerva*; Urticæ. A perennial from South America and the West Indies, with fusiform, compact, rugose, knotty roots, which have an agreeable aromatic smell, and a rough, bitterish, warm, acrid taste. It has been considered stimulant, sudorific, and tonic, but is now little employed — *Lýthrum Salicària*. Astringent and tonic, but little used. — *Boswèllia* (by Dr. Roxburgh, in memory of the late Dr. John Boswell of Edinburgh) serrata; Nat. Ord. *Meliæ*. A lofty tree of central India, which produces the gum Olibanum of commerce. This substance distils from incisions made in the bark of the tree during the summer months. It is the frankincense of the ancients, the *thus* of the Romans, and the *libanos* of Theophrastus and Dioscorides. "In the early ages, it was much used as incense in sacrifices; and, in modern times, the Greek and Romish churches still retain the use of frankincense in some of their ceremonies." When heated, it burns brilliantly, and diffuses an agreeable odour, and is chiefly employed as a perfume in the rooms of the sick. — *Saccharum officinarum*. The Chinese date the cultivation of the sugar-cane from the most remote antiquity. Dr. Roxburgh considers the species cultivated in China as distinct from that grown in the East and West Indies, and has named it *sinense*. It is believed to be indigenous in the south-east of Asia. Marco Polo found abundance of sugar in Bengal in 1250. About the close of the 13th century, its cultivation was extended to Arabia, Egypt, and Ethiopia. From Africa it migrated to Spain; by the Spaniards it was taken to the Canary Islands, in the 15th century; and, by the Portuguese, from Sicily to Madeira. In the beginning of the 16th century, the sugar-cane was conveyed by the Spaniards to the West India Islands and the Brazils. "It is a remarkable fact, that the sugar-cane in the West Indies never perfects its seeds, the plant being propagated always by cuttings from the roots. Dr. Roxburgh, who resided many years in India, never saw the seed of this plant." There are several varieties: that chiefly grown in the West Indies is called the country cane; it is propagated by cuttings, and requires a rich soil. The cuttings are taken near the top of the

stalk, and laid "horizontally across the ground. In Jamaica, and the other West India Islands, the canes are usually cut for the purpose of making sugar immediately after the autumnal rains, when the plant has acquired from 8 to 12 ft. in height. The arrowing of the cane is a sign of its attaining its full growth; and it is desirable that it should be cut as early after this as possible. As soon as they are cut, the canes are stripped of their leaves, and crushed between iron cylinders to express the juice, which is received into a large copper vessel called the *clarifier*, where it is mixed with lime, in the proportion of 1 pint to 100 gallons of juice, and heated to the temperature of 140°. A thick scum soon collects on the surface, which is left unbroken, and the clear liquor drawn from below and introduced into a large boiler. Here it is boiled briskly till the bulk of the liquor is considerably diminished, the scum, as it forms, being constantly removed. From this first boiler it is passed into a second, from that to a third and fourth, in each of which the boiling is continued. When sufficiently concentrated, it is poured into a large wooden vessel called the *cooler*, where it crystallises or *grains* as it cools. The mass is then put into empty hogsheads, having a hole in the bottom, into which the stalk of a plantain leaf is thrust. Through these holes the *molasses* drain into a receiver, and the sugar, thus cleared, is brought to this country under the name of *muscovado* or *raw sugar*. The thick black sirup which remains mixed with it, well known by the name of *molasses*, is usually separated by draining. A gallon of raw juice yields, on an average, about a pound of raw sugar. The raw sugar imported into Europe is still farther purified. It is dissolved in lime-water, and boiled along with a small quantity of blood. The lime abstracts any portion of acid that may still remain; and the blood coagulates and entangles all the impurities, which are thus easily removed by scumming the liquor as they rise to the top. When the liquor is boiled down to a proper consistence, it is poured into inverted conical moulds made of clay, where it consolidates; and any sirup which may remain is removed by allowing a little water to drain through it. The sugar-loaf is then thoroughly dried in an oven. The sugar thus purified is called *loaf sugar*. When redissolved, and heated in the same way a second time, it is called *refined sugar*. This process is said to have been first practised by the Venetians."

The Pomological Magazine. In 8vo Numbers, monthly. 5s. coloured; 3s. 6d. plain.

No. XXIV. for October, contains

93. *Knight's Early Black Cherry.* Raised by Mr. Knight, about 1810, from the seed of the Graffion, impregnated by the May-Duke; the same parentage as the Black Eagle and the Waterloo, and resembling them both. "If we were called upon to state specifically the difference between this and the Black Tartarian cherry, we should certainly be unable to do so; but, at the same time, we should not be the less of opinion that they were distinct. It is well known to fruit-growers, that slight shades of different fleeting characters which words are unequal to express, often alone distinguish varieties, materially different from each other, as objects of cultivation. In figure, size, colour, and flavour, this is nearly identical with Black Tartarian; but it has the rare merit of ripening earlier. On this aspect, it will be ripe by the middle of June; so that it is even earlier than the May-Duke."

34. *The Devonshire Quarrenden Apple* (Red Quarrenden Sack in some collections). "There is no better autumn apple than this, for point of productiveness, beauty, or excellent flavour. As a standard crop is always considerable; and, if cultivated as a dwarf, the appearance of the trees, laden with fruit, is even more an object of ornament than trees usually are. It is fit to gather in the month of August, &

seasons will last till the end of September. It was sent from Devonshire to the gardens about London, and was probably raised in that county, where it is extensively cultivated."

95. *The Noblesse Peach* (Noblest, *Miller* ; Mellish's Favourite, *Eng. Gard.* ; Double Montagne, *Hort. Soc. Fruit Cat.*). "For the excellent account of this highly valued and most useful peach, our work is indebted to Mr. Robert Thompson, under-gardener in the fruit department of the Horticultural Society's garden, to whom we have before had to express our obligations ; which, indeed, ought to be repeated in every page." The fruit is large, the flesh parts with the stone, and is melting and rich. It ripens in the end of August, and is one of the principal sorts for forcing. The tree is hardy, and a good bearer.

96. *The White Astracan Apple* (Transparent de Muscovie and Glace de Zéland of foreign gardens, *Pyrus astracánica Dumont Courset*). "The waxy secretion, called bloom, which has been wisely provided by nature for protecting the delicate cuticle of many succulent fruits, such as plums, grapes, and others, is scarcely found in the apple and pear, or at least only in very minute quantity. In apples, however, there are a few exceptions to this, and, what is extremely remarkable, almost exclusively among varieties cultivated in Russia. For instance, the apple called by Mr. Kirke the Duchess of Oldenburg, which is known to be of Russian origin, the Emperor Alexander, and the subject of this article, with some others, are covered with a coating of bloom, as copious and delicate as that of the most beautiful plum. Independently of this, the White Astracan apple possesses the singular property of becoming transparent when ripe, a circumstance which is well known to occur in a variety of crab, but which is very rare among apples. It is on all these accounts, we presume, that the foreign writers whom we have above cited have been induced to consider this a distinct species of *Pyrus*, in which they are unquestionably wrong." The tree is hardy, and a good bearer ; fruit ripens in August, and, when newly gathered, is delicious, but it keeps only a few days. It is cultivated in Russia, and said to grow wild about Astracan. It was first brought into notice by Mr. Atkinson.

No. XXV. for November, contains

97. *The Spring-Grove Peach*. Raised by Mr. Knight from Neill's Early Purple and the pollen of the Red Nutmeg. A very good early variety, ripening about the end of August ; not large, but handsome and well flavoured.

98. *The Gravenstein Apple*. Said to have been introduced to the garden of a castle in Sleswick or Holstein, called Gräfenstein, from Italy ; but it is very doubtful if the English variety of this name be the same as that of Christ, Mayer, and others. "An apple of great merit, and one which should be found in all good gardens. It is a hardy tree, bearing as a standard, but becoming much improved if grown upon a wall. Its flavour is very high and grateful ; but its merit is as a kitchen apple, as which it is considered to have no equal." The fruit is large, ripens in October, and will keep till December ; wood strong, and leaves and flowers large.

99. *Lucombe's Nonsuch Plum*. Raised from seed by Messrs. Lucombe, Pince, and Co., of Exeter. "It is undoubtedly the nearest approach that has yet been made on the part of a seedling to the famous Green Gage of the English, Reine Claude of the French ; and although it cannot be said to equal in all respects that celebrated variety, it is nevertheless entitled to a character of very high excellence."

100. *The Irish Peach Apple*, sometimes called the Early Crofton, but not the Early White Crofton, which is a distinct variety. Much cultivated in Ireland ; perfectly hardy, flowers early, bears well as a standard, and is

among the best table apples of August. Fruit and leaves middle-sized, wood moderately strong.

No. XXVI. for December, contains

101. *The Early Bergamot Pear*. Received by the Horticultural Society from France, under a name which belongs to a perry pear. Fruit middle-sized, roundish, flattened; flesh very juicy, a little crisp and gritty, but very rich and sugary. Ripens in the end of August and beginning of September, and bears abundantly as a standard. "About the period when it ripens, we have none that are half as good. It is a most excellent variety of its season, and well worth growing."

102. *The Summer 'Rose Pear*, the Epine Rose of Duhamel. "The French gardeners have a class of pears which they call *Cailleaux*, in consequence of the resemblance their speckled appearance gives them to the *caille*, or quail. To this class belongs the subject of the present article, which is even, as Duhamel informs us, sometimes called the Cailleau Rosat. . . . We have not adopted the name of Onion-shaped Pear, which would have been a more expressive name, because the French apply that term both to pears having the peculiar flattened figure of this, and to others which grow in such clusters upon the branches, that the latter resemble a string of onions. The form is that of an apple, rather than of a pear; and Noisette remarks that it is so in a greater degree than any pear he knows. It is a most excellent and beautiful variety; not, indeed, to be compared with the Jargonelle, with which it ripens, but greatly superior to any of the kinds commonly cultivated, which are in eating at the same time. It bears well as a standard. In perfection from the 10th to the end of August." Fruit depressed, middle-sized, skin inclining to yellow, speckled with russet; "on the sunny side bright rich red, intermixed with brown spots. Flesh white, juicy, rich, and sugary."

103. *The Morocco Plum*, the Early Black Damask of Langley and Forsyth. "One of the very best of our early plums;" very hardy, bears well as a standard, and ripens fully a month before the Orleans, coming in at the beginning of August. Fruit middle-sized, roundish; skin blackish purple; flesh greenish yellow.

104. *The Cole Apple*, sometimes called the Scarlet Perfume, but of unknown origin. "A very excellent autumn apple, in perfection about the end of August, remarkable for the singular beauty of both its flowers and fruit. The former are large, and a deep rosy red, marbled with white; the latter is of a rich sanguine colour."

No. XXVII. for January, 1830, contains

105. *The George the Fourth Peach*. One of the finest of American peaches; of vigorous growth, extremely healthy, and ripening its fruit about the middle of September. The fruit is middle-sized, globular, and between a clingstone and a melter.

106. *The Summer Francréal Pear*. A hardy, healthy, free-growing tree and a great bearer; the fruit rather large, turbinate, thickest about two thirds from the stalk, and ripening in the middle of September.

107. *The Kerry Pippin Apple*. An excellent autumn fruit of English origin, scarcely rivalled in its season for high flavour, richness, and beauty. The tree is said to be broom-headed, and a great bearer. The shoots are upright and downy at the extremities; the fruit is handsome, middle-sized, oval. It ripens in September, and keeps till October.

108. *The Jargonelle Pear* (Epargne, Grosse Cuisse Madame, Présent, Saint Lambert, Saint Samson, Poire des Tables des Princes) equalled in flavour, and unrivalled in productiveness.

Its time of ripening and keeping not mentioned. "Its name is according to Ménage and Duchat, from Jargon, anciently Gergon; in

Gergo; in Spanish, *Gerigonza*; all corruptions of Græcum: whence Merlet infers that the Jargonelle was the *Pyrum tarentinum* of Cato and Columella, the *Numidianum græcum* of Pliny, and the *Græculum* of Macrobius. If this conjecture be well founded, the kind to which the name belongs will be one of the most ancient in cultivation. To this country it was certainly brought from France, of which there is abundant evidence. The Jargonelle of the French is, however, not ours, but an inferior kind, green on one side, and red on the other. They call ours the Grosse Cuisse Madame, distinguishing it from the common Cuisse Madame, which is our Windsor. How this, or any other variety, became possessed of so singular an appellation, it is difficult to say. Mayer tells a long story of its origin, which is not much to the purpose; and Manger relates an anecdote about Prince Eugene and one of his officers, who did not know that Dameschenkel was a pear, which is worth looking at."

Hooker, William Jackson, LL.D. F.R.A. and L.S. &c. &c.: *Flora Boreali-Americana*; or, the Botany of the Northern Parts of British America: compiled principally from the Plants collected in the late Northern Land Expeditions, under command of Captain Sir John Franklin, R.N. To which are added (by permission of the Horticultural Society of London), those of Mr. Douglas, from North-west America; and of other Naturalists. London, 1829. Part I. To be completed in 12 4to fasc., each containing 6 sh. and 20 pls. One guinea each.

We are happy to see that the arrangement of this work is according to the natural system. The generic and specific characters are in Latin, and the remarks respecting habitation in English. The plates are outlines, admirably drawn and engraved. The plants figured in this part are as follows:

DICOTYLEDONES. *Thalamifloræ*. *Ranunculaceæ*. — *Clématis Douglàssi*, a beautiful species, with leaves as deeply divided as *Pæonia tenuifolia*; *Thalictrum Cornuti*; *Anemone deltoides* and *Richardsoni*; *Ranunculus cardiophyllus*, *affinis*, *Purshii*, *fascicularis*, and *orthorhynchus*; *Caltha leptosépala*; *Cóptis asplenifolia*; *Achlys triphylla*; *Epimedium hexandrum*; *Corydalis Scouleri*; *Parrya macrocarpa*; *Vesicaria didymocarpa*; *Hutchinsia calycina*; *Thysanocarpus curvipes*. There is also a large and well-engraved map.

Henslow, the Rev. J. S., M.A., Professor of Botany in the University of Cambridge: *A Catalogue of British Plants, arranged according to the Natural System, with the Synonymes of Decandolle, Smith, and Lindley*. Cambridge. Small 8vo. 1s.

This catalogue is intended chiefly for the use of those students who attend Professor Henslow's botanical lectures in the University of Cambridge; but it will be found a useful companion to the young gardener who is studying the natural system and has few resources but British plants. At the end a table is given, from which the following is an extract:—

		Total number of plants in Great Britain.			
		Orders.	Genera.	Species.	Varieties.
Dicotylédones	{ Indigenous	- 77	378	1099	1207
	{ Naturalised	- 1	17	45	47
Monocotylédones	{ Indigenous	- 16	105	351	371
	{ Naturalised	- 0	3	6	0
Total (Phanerógamæ)		- 94	503	1501	1625
Part of Acotylédones		- 5	60	447	499

The synonymes of Decandolle and Mr. Lindley form an exceedingly useful part of this catalogue.

Johnson, George W., Esq., of Great Totham, Essex, Author of Essays on Horticultural Chemistry in the Gardener's Magazine, &c.: A History of English Gardening, chronological, biographical, literary, and critical. Tracing the Progress of the Art in this Country from the Invasion of the Romans to the present Time. London, 1829. 8vo. 9s. 6d.

This work, by our esteemed and highly scientific correspondent, we have sent to be reviewed by one of the few men whom we know to be capable of forming a just estimate of its merits or demerits.

Richard, A., M.D., Member of the Faculty of Medicine of Paris, &c. &c.: New Elements of Botany, containing the Character of the Natural Families of the Vegetable Kingdom, &c.; translated, with Notes adapted for the Use of Students in Medicine and Pharmacy. By P. Clinton, A.B. M.B. T.C.D., Licentiate of the King and Queen's College of Physicians, Professor of Medical Botany, Dublin, &c. &c. London, 1829. 4th edit. in one very large volume 8vo, with plates. 14s.

Till Mr. Lindley's extended *Introduction to the Natural System*, now preparing, or in the press, appears, this work may be advantageously studied by the young gardener.

Johnson, William Cuthbert, of Great Totham, Essex: An Essay on the Uses of Salt in Agriculture and Horticulture, &c. London, 1829. 8vo, 8d edit. 5s.

In the introduction, the author assures "the friends to the employment of salt in agriculture, that *he is* always happy to be favoured with their communications, assist in any experiments, or answer any questions in a cause which is now proceeding so triumphantly." It is singular that such a body of evidence should be brought together on the advantages of the application of a moderate quantity of salt to every description of growing crop, from grass to timber trees, and to almost every domestic animal, from the horse to the honey-bee, and yet that salt should be so little in use. We have not a doubt ourselves that it may be of real use to live stock; because we have seen it very generally given on the Continent. Mr. Johnson says, "I have given my own gig-horse an ounce of salt every night in his corn, for the last five years; and though he has, during that period, worked very hard, he has continued in the best health, never having had a dose of physic in his life." To be able to dispense with physic, either in the economy of men or cattle, is a grand object; and we certainly think the occasional, or perhaps the constant, use of salt in the food of domestic animals, and especially in that of the horse, as being in a more highly artificial state than the others, a desirable object. There is a tract by the same author (10th edit., 1s.), containing practical directions (Vol. II. p. 339.), which those intending to make an experiment may refer to.

Dawson, Mr. Robert, late Agent to the Australian Agricultural Company, New South Wales: Statement of the Services of Mr. Dawson, as chief Agent of the Australian Agricultural Company; with a Narrative of the Treatment he has experienced from the late Committee at Sydney, and the Board of Directors in London. London, 1829. 8vo.

We do not quote this pamphlet for the sake of entering into the merits of the subject, though it is clear to us that Mr. Dawson has been exceedingly ill used; but to advise such of our readers (and we know there are several) as have shares in the Australian Company, to examine into the manner in which its business is conducted. We have lately seen several gentlemen from Sydney; and, from all that we can learn, this company is not likely soon to become a profitable speculation. If ever it pays the salaries of the officers, we are very much mistaken. Like most other companies for ultra-

marine objects, it was got up by a particular set, for a particular benefit, and that benefit having been attained, the shareholders are left to make the most of their bargain. Had we a hundred shares, we should throw them up rather than advance another shilling. We have just heard of a Brazilian Agricultural Association, the shares of which are said to be almost all taken. The head manager is to have 2000*l.* a year, and the resident farmer 500*l.* a year, with numerous other advantages!!

Cree, John, of the Addlestone Nursery, Chertsey, Surrey: *Hórtus Addlestonénsis*; or, a Descriptive Catalogue of Plants, &c., cultivated in the Addlestone Nursery: containing the Botanic and English Names, with numerous Synonyms; the Natural Order, and Linnean Class and Order, of each Genus; proper Soil, Time of Flowering, Height, and Colour of Flower of each Species, with References to Figures. To which is added, a select List of Fruit Trees, with Descriptions; and also a Catalogue of Garden Seeds, &c. London, 1829. pp. 172. 5*s.* 6*d.*

Mr. Cree states his object to be "that of increasing the taste for horticulture among ladies and gentlemen, by making them acquainted with the nature and qualities of those plants and fruits which they may already possess, or may in future wish to acquire;" and he has certainly produced a very neat and complete little work of its kind; perhaps, taking it altogether, the most complete which has yet been published by any British nurseryman. We do not allude to the number of species and varieties, but to the descriptive details referred to in the titlepage. The only objection that we have to it is the price, which is one half too much for a tract of 172 pages; even though printed in columns, which is much more expensive than common printing.

A Treatise on Practical Surveying, and Topographical Plan-drawing.
London. 8vo. 10*s.* 6*d.*

We regret that this work is got up in a style too expensive for the subject; otherwise, it is what is very much wanted for the self-instruction of young gardeners. The figures in plates I, II, IV, and some of those in III, would have been much better engraved on wood, and printed along with the text: a world of trouble, in referring to them letter by letter, would have been saved to the learner; and, with a small type, the book might have been afforded for 5*s.* We hope the Useful Knowledge Society will take up the subjects of surveying and drawing in all their branches, and produce something complete and cheap. No book is more wanted among young gardeners than one by which they might teach themselves every department of drawing, surveying, and measuring.

Time's Telescope for 1830; or, a Complete Guide to the Almanac: containing comparative Chronology, Contemporary Biography, and the Naturalist's Diary. London. 12mo, cuts, pp. 432. 9*s.*

Fall, Thomas, Surveyor of Roads: *The Surveyor's Guide*; or Every Man his own Road-maker. Comprising the whole Art of making and repairing Roads, Prices for Work, forming of Estimates, and Office of Surveyor. Retford, 1829. 12mo. 5*s.* bds.

A useful little manual, only deficient in figures of the different tools employed.

Anon. (attributed to Mr. Sang, Nurseryman, Kirkaldy, Editor of *Nichol's Planter's Calendar*): *Strictures on Sir Henry Steuart's Planter's Guide.* By a Planter of some Experience.

We are not sorry to see in this pamphlet, in which practical gardeners are relieved from the aspersions thrown out against them by Sir Henry Steuart, Sir Henry's own merits carefully estimated, and the Committee of the High-

land Society most deservedly censured, and, indeed, we might say, held up to public contempt.

Some "palpable contradictions" are first pointed out; such, for example, as (p. 2., 2d edit.) "when he is giving instructions for the transplanting of great trees by the planting machine: 'It is obvious that the art of general planting must at the same time be taught; as both are governed by the same general laws, and should, of course, be practised on the same known principles.' Yet he tells us (p. 93.), that 'to establish any just analogy between the transplanting of young trees, and the transplanting of old, is utterly impossible, whatever can be said to the contrary.'"

Hundreds of thousands of acres, we are next told, had been planted before Sir Henry's time, and "had succeeded to admiration, although generally directed and executed by gardeners, of whom he says, 'ninety-nine out of a hundred know nothing of the properties and culture of a tree:' so that, when their employers are so foolish or unfortunate as to be guided by them, it is (in Sir Henry's courteous phraseology) the blind leading the blind."

"For the consolation of gardeners, however, be it noticed, that he adds, 'Among more than a hundred gentlemen, and their gardeners and overseers, with whom I have conversed, not one appears to me to possess the remotest idea of the principles of selection. Of the preparation of the soil they seem to know equally little; and *two* only of the whole number consider either the one or the other attended with difficulty.' Now, supposing (for one must make suppositions in such a loose case), that the number of gentlemen, overseers, and gardeners, is equal, we have two thirds of a wise gardener out of only thirty-three blockheads! So that, when Sir Henry talks of 'uneducated foresters, and self-sufficient gardeners,' he talks of the latter, it is to be hoped, with the foregoing fractional reservation.

"Again, he says, 'It is a *radical* error to suppose, as is too often done by planters and gardeners, that heat is not as necessary to the infancy of a tender plant as to a new-born and helpless animal; and that the former is not as ill adapted to resist cold, and early and undue exposure to the climate, as the latter.' (p. 101, 102.) Upon more cool investigation, our author may discover that matters are not *quite* so bad, as a great part of the science of gardening depends upon the knowledge of this simple fact; and we think it is carrying the matter too far, to represent gardeners as being ignorant of so essential a part of their business."

We pass over other matter to the same effect, to notice some "redeeming instances" of transplanters found "amongst the fraternity." "In presenting these, it seems right to place age, intelligence, and experience, at the head of the list. Mr. James Stuart, at Pinkie, as is shown in the *Caledonian Horticultural Memoirs*, vol. i. p. 202., published in the year 1813, 'lifted, from the year 1807 to 1811 inclusive, above one hundred and sixty large fruit trees, only three of which failed.' His method of removing them is detailed with great exactness; and it is so analogous, in some respects, to Sir Henry's prescriptions, that if Sir Henry did not derive his notions from that publication, they wonderfully corroborate Mr. Stuart's. The striking nature of Mr. Stuart's transplanting operations will not be disputed, when it is known that some of the transplanted trees were two hundred years of age; and that they remain healthful and fruitful to the present day.

"It is not easy to conceive that Mr. Stuart would have been less successful, at the same time, in transplanting forest trees, had his duties then imposed such a task upon him. Ten years afterwards, they did so; for, in the year 1822, when Sir John Hope obtained a piece of ground between his mansion-house and the town of Musselburgh to the west, it became a desideratum to have that place planted immediately with large trees, so as to exclude view of the town. Mr. Stuart entered on his task with his wonted alacrity, and it would be difficult to select any instance of large forest trees ha-

been transplanted with greater success. The trees are considerably above one hundred in number, and of many sorts: oaks, Scotch and English elm, ash, horsechestnut, beech, several of the fir tribe, black and woolly-leaved poplar; besides Portugal laurel, laurel-bay, holly, and other evergreens. The finest trees are now from 36 to 42 ft. in height, and in girth, at breast height, from 2 ft. 9 in. to 1 ft. 10 in. Beside these, there are a good many others to the eastward, between the house and the offices, which were transplanted at an earlier period, all of which are in excellent health and of vigorous growth.

“The next person we shall mention is Mr. William Macnab, now of the Royal Botanic Garden of Edinburgh. That gentleman was foreman to Mr. Ayton of Kew, in the year 1807, at which time Her late Majesty Queen Charlotte being desirous to have a new place made at Kew, with large trees and shrubs, the removal of these, and the conducting of the whole operations, naturally devolved upon him. Of this matter Sir Henry takes notice (p. 63.), saying, ‘Of late years, however, some successful examples have been given of what may be called horticultural transplantation, that is, the removal of large shrubs and trees of an ornamental or exotic species.’ It is not easy to say whether he means to impress us with the ease or difficulty of the undertaking, by calling it a ‘horticultural transplantation,’ and designating the trees as ‘ornamental or exotic.’ Almost all the transplanted trees at Alanton are ‘exotic;’ such are the lime, the larch, the sycamore, the horsechestnut, and even the beech, and surely Sir Henry will not deny that these trees are ‘ornamental.’ At all events, Sir Henry admits that large trees and shrubs were transplanted at the Royal Garden at Kew, ‘with extraordinary success.’

“Mr. Macnab, therefore, was no novice in the business, when, in the year 1822, he was intrusted with the transplanting, from the old botanic garden at Leith Walk, to the new botanic garden at Inverleith, of what Sir Henry justly calls ‘a vast number of plants of great variety and value.’

“Sir Henry tell us, that, a year previous to taking them up, Mr. Macnab followed the ingenious method of Lord Fitzharding, in cutting the roots around the plants, at some short distance from the stem. But, though Sir Henry thinks that, ‘more than thirty years ago, he (Sir Henry) was *the first* to introduce this into Scotland.’ Mr. Macnab has publicly denied having learned it at his school.

“Indeed, his having prepared his subjects after this method, was only according to the practice of the best Scottish gardeners; for, although our author thinks that he has reason to believe that he himself, more than thirty years ago, was the first to introduce this method into Scotland, there are, perhaps, few Scottish gardeners who do not know that he thinks wrong. For Mr. John Reid, gardener to Sir George Mackenzie of Rosehaugh, who published his *Scots Gardener* in 1683, taught his countrymen this very method. His words are: ‘The rule for removing old large trees out of woods or other places, which never were before transplanted, is to make a trench at two sides of the tree, at a considerable distance, till you can force the tree upon one side; then cut the tap-root through, saving as many collateral roots as you can; lessen its head or top it, if it will suffer, and so set up the tree again, and tread in the earth about it, as it was; let it stand two years, to emit fibrous or feeding roots to nurse it when planted out.’* So that Mr. Macnab should have shown himself ignorant, indeed, if he had

“* First edition, small 4to, p. 80. Edin. 1683, published by David Lindsay, foot of Heriot's Bridge; edition, 1776, 18mo, published by James Reid, Leith, pp. 91, 92. Had such a passage occurred in any of the *Scriptores de Re Rustica*, and been unknown to Sir Henry, he would have felt ashamed; yet no mean authority has declared, ‘*Turpe est in patria vivere et patriam nescire.*’ ”

needed Sir Henry's instructions in this matter, and had not known what had been universally taught in this country, and amongst his own class of society, at least for the period of one hundred and forty-six years!!"

"Many more instances of the successful transplantation of large trees and shrubs, by the class of persons we are now defending, might be produced; but we shall be satisfied with those at one other place.

"In the year 1785, some very large old fruit trees were transplanted from the garden at Raith to the new garden at Abbotshall, with such success, that they bore large crops the following year; and they are still healthful and good bearers. At the same place, twenty years ago, many large Portugal laurels and hollies were transplanted by Mr. Norval, with perfect success, as the plants now bear witness. Mr. Norval has also removed many evergreen oaks, and other plants of very considerable size, with like success; indeed, seldom does a season pass without such labours being required of him.

"If, therefore, Sir Henry Steuart can boast of his success, so also can many of that class which he has treated with such undeserved contempt."

The following observations on the trees in the park at Allanton are particularly deserving of perusal, and are, in our opinion, incomparably more valuable than any thing that has issued from the Highland Society on the subject:—"That Sir Henry has merit in the transplanting of his large trees at Allanton, we are far from disputing; indeed, we admire the living evidences of his success. There are, perhaps, 200 of the subjects which have been transplanted now very fine trees. As specimens of their excellence, we may notice the largest and finest, a beech, said to have been transplanted 25 years ago. Its girth, at breast height, is 5 ft. 7 in., and, by estimation, it is 50 ft. high. Another beech, said to have been lifted 18 years since, is 4 ft. 10 in. in girth at the same height, and is estimated to be 45 ft. high. A larch (of which sort there are few others in the park, and these small) is in girth 4 ft. 1 in. at breast height, and, by estimation, is 55 ft. high. This tree is said to have been transplanted 20 years ago. There are many limes, oaks, and sycamores, said to have been lifted 12 or 13 years ago, which are, by estimation, from 30 to 40 ft. in height, and in girth from 2 ft. 6 in. to 4 ft. 7 in. There is a good horsechestnut, lifted seven or eight years ago, in girth 3 ft. 1 in. and estimated 20 ft. high. These trees are generally from 3½ to 5 ft. high in the boles, and are for the most part clump-headed, being in breadth to height as 20 to 30.

"Such may be considered a fair specimen of Sir Henry's success, to the extent of 200 at least. But, while we give him all credit for these, we cannot shut our eyes on some other facts. There are in Allanton Park a good many trees, transplanted about two or three years ago, the girths of which are from 14 to 15 in., and the heights from 12 to 24 ft., generally as poor specimens of transplanted trees as ever were seen, having still but few and small leaves, with many of the points of the top branches dead. There is, however, every chance that, as the others have done, they will obtain a different character in the course of years. The experience of such backwardness is very judiciously expressed by Sir Henry. 'It sometimes happens, when the progress of removal has been conducted in the best manner, and on the best soil, when the sun has shone, and the rains have descended most profusely on the plants, that six, and seven, and a greater number of years will elapse without any decided proof of advancement.' 'For such exceptions to general success it is not easy to account; but it is certain that such exceptions occasionally do occur.'

"It would seem the above confession (which, by the by, would intimate a greater proportion of deaths than 'one out of forty') had been made just after reading Mr. Pontey's opinion of the art, namely, that 'large transplanted trees are "like the stricken deer," and incapable of harmonising

with any thing about them.' Of this sentiment, Sir Henry says, 'The justness of the remark cannot be questioned.'

"In some such perplexing circumstances Sir Henry must have been, when he cried out, 'The truth is, vegetable physiology is in itself an obscure subject!' He might have added, without any great deviation from truth, that the removal of large trees is, in many instances, extremely precarious.

"In evidence of the uncertainty of success, we could produce abundance of examples in Allanton Park, this very season (1829). At that place, on the west side of the lake, where the water discharges itself, the bank has been wooded last winter or spring; and there may have been some 80 or 100 trees, of various sizes and ages, planted there, almost every one of which looks ill, while a good number of the largest are quite dead."

We pass over several pages which might be advantageously quoted, and conclude with the review of the Committee of the Highland Society, than which we have not met with a more striking detection of error and exposure of absurdity for a long time. "The expense of removing large trees is an important consideration in the machining system. Mr. Meason of Lindertis, one of the members of the Highland Society Committee, gives an account of the transplantation of two trees in his presence at Allanton Park, the one 28 and the other 32 ft. high, and from 30 to 36 in. in girth. (*Planter's Guide*, p. 525.) The expense of lifting and replanting the two was 15s., so that each tree cost 7s. 6d; but there are several items in the account unfortunately overlooked or omitted. He does not inform us whether the trees had been replanted lately before, not an unfrequent circumstance at Allanton, though a material one as regards the expense; and the account of expense includes only the more obvious cost, the men's wages, overlooking altogether the pair of horses, the driver, &c.

"Indeed, Sir Henry himself, in giving his statements to the public, makes some very strange omissions and miscalculations, involving very absurd results. In examining this matter, we shall quote his words (*Planter's Guide*, p. 356.): 'In looking up the lake, the reader will observe a bold promontory or headland, situate on the right hand side, near the bridge, which was seen by the Committee of the Highland Society. This prominent spot was wooded by an open disposition of trees, twenty-two in number, and consisting mostly of sycamores, with a few oaks and elms interspersed. A few bushes which are close to the water-edge, have recently been added.

" 'The dimensions of the trees were from 25 to 28 ft. high; and, as the situation was one of very open exposure to the west, care was taken to select such subjects as possessed, in a considerable degree, all the protecting properties. This plantation was executed in nine days, by nine workmen, and a horse to draw the machine, the distance not much exceeding a quarter of a mile. The expense, which amounted to 10s. a tree, is as under:—

9 workmen, 8 days	-	-	-	£6	0	0
1 horse and driver, 15 days	-	-	-	3	15	0
Dung, compost, 44 loads, at 9d.	-	-	-	1	13	0
				<hr/>		
				£11	8	0

" 'Now,' he goes on, 'we shall suppose that the art of giving immediate effect to wood had been altogether unknown to me, and that I had wished to procure 22 fine trees, for so prominent a situation, by the ordinary system of planting: the first thing I should have had to do, according to the most speedy method, would have been to enclose, trench, and manure the ground for a green crop, and to plant it with nursery plants of four or five years' growth. The next thing would have been to keep it with the hoe for two years, until the plants shoot freely, which they were likely to do within that period; and, after about thirty years in this climate, the whole would

have been of the size wanted. Had no means been taken to cultivate the ground, forty years at least would have been required.

“ ‘ According to the former supposition as to time, and that the trenching and manuring for a green crop were properly executed, the crop would, in common cases, pay the cost of both these operations; and the ground being rather more than a quarter of an acre, and ready for planting, without preparatory expenditure, the outlay would be the following:—

Enclosing $\frac{1}{4}$ acre, double railing, $4\frac{1}{2}$ ft. 90 yds., at 6d.	-	£2	6	0
Planting the ground with various trees	-	1	10	0
Keeping with the hoe for two years	-	0	16	8
Renewing the railing four times	-	9	4	0
Rent of $\frac{1}{4}$ acre for 30 years, at 15s.	-	22	10	0
Accumulated interest for 30 years	-	115	10	0
<hr/>				
Total expense	-	£151	16	8

“ ‘ Thus, then,’ continues the honourable baronet, ‘ it appears that, by the ordinary method, you may have a group of plantation, consisting of 22 trees for 151*l.* 16*s.* 8*d.*; and, by means of the transplanting machine, for 11*l.* 8*s.*, or nearly the thirteenth part of the money!!!’ * And he adds, triumphantly, ‘ I conceive that it would not be easy to give a more complete answer than this comparative statement, to the persons who object to transplanting, on the score of *expense*; exclusively altogether of the difference of obtaining the effect of wood, in the one case at once, and of waiting thirty years to obtain it in the other.’

“ That our author was capable of making the foregoing statement will surprise no one who has attentively read the *Planter's Guide*; but that the Committee of the Highland Society, composed of noblemen and gentlemen of the highest name and literary fame, could have heard it without having their risible faculties excited, is not to be believed; and that they did not take care to caution their constituents against the delusive estimate, is astonishing.

“ We shall admit that the trees were actually transplanted for the sum of 11*l.* 8*s.*; but who, in his sober senses, can believe that that sum was the actual cost of the 22 trees, from 25 to 28 ft. high, and which, of course, had been prepared with such diligence and science at least for four years before? If they would cost him, as he has stated, 151*l.* 16*s.* 8*d.*, raised on the promontory, how does it appear that they did not cost him the same sum when raised on a spot of the same field a few hundred yards distant?

“ The statement which Sir Henry made to the committee is equally just and convincing as if he had affirmed that the calves he had bought, and which he had carefully fostered in a well-trenched and manured pasture field, till they had grown large oxen, had cost him nothing more than the expense removing them from one field to another!

“ Is it not plain that, instead of *contrasting* the sum of 151*l.* 16*s.* 8*d.* w 11*l.* 8*s.*, he ought to have *added together* these two sums, in order to discover the total expense of his 22 transplanted trees; which, instead of being 8*s.*, really amounts to 163*l.* 4*s.* 8*d.*?

“ We fairly confess we cannot see any way of accounting for the the learned baronet, and the gentlemen giving their countenance to piece of arrant nonsense. Indeed, one is at a loss whether most to Sir Henry's dexterity in passing off so palpable a joke upon his visitors' extreme good-humour or politeness in not noticing and res for, to consider both parties serious is impossible.”

After arguing that transplanted trees, with trunks of from 15 t

* * The three notes of admiration are in Sir H. Steuart's v

diameter, can never form valuable wood for future generations, he concludes:—“While we state these things, we are far far from wishing to undervalue Sir Henry Steuart’s efforts to diffuse the knowledge of an improved method of retransplanting large trees; which, we think, must be of advantage to landscape-gardening. All that we wish is, that the system may rest upon a sound basis, and occupy its legitimate place in arboriculture. From the very nature of things, this place must be both subordinate and circumscribed; for, before a proper subject can be obtained, it must be nursed for many years, with great assiduity and much outlay. Therefore, to talk of a person by such means anticipating so many years of his life is sheer drivelling; for no man, by labouring fifty years to obtain an object, can be said to anticipate that period, merely by removing the object from one place to another.”

In p. 17. 21., the author points out an error into which we have inadvertently fallen in the *Encyclopædia of Agriculture*, in attributing to Mr. Sang the doctrine that plants have not a power of renewing their tap-root, and that the tap-root is of importance to full-grown trees; and a further error which we have committed is, in making him say “that strength is gained as effectually by a few branches to a head as by many.” It appears from quotations given in the pamphlet from the *Planter’s Kalendar*, that Mr. Sang is of the same opinion with Sir Henry and ourselves, and that he had published this opinion sixteen years before either of us. We have not the *Planter’s Kalendar* before us; nor, if we had, is it probable that we could, at this distance of time, account for having fallen into the very singular error of misrepresenting the sentiments of an author whose work every page in our article Planting, in the *Encyclopædia of Agriculture*, will show that we took as a text-book: but, in the edition of the *Encyclopædia* now passing through the press, we shall take care to rectify the error; and this, we trust, will be a sufficient apology to Mr. Sang, than whom we do not know a man more worthy of esteem, both in his professional and moral character.

Whoever possesses the *Planter’s Guide* will do well to possess also these *Strictures*.

The Library of Entertaining Knowledge. Vol. II. Timber Trees and Fruit Trees. London. 12mo. 4s.

The following letter is from a scientific practical gardener of considerable experience. What he says respecting pruning the pine and fir tribes we consider highly important.

“Sir, In turning over the leaves of Vol. II. Part I. of that delightful publication the *Library of Entertaining Knowledge*, it is most gratifying to find so rich a store of useful as well as entertaining information, compressed into so small a compass, and yet written in a style so well calculated to please and excite the general reader, for whose use and benefit this volume on vegetable substances was avowedly published.

“However, notwithstanding every disposition to be pleased with the performance, should it appear that even but a few errors have crept into it, no matter whether through inadvertence or otherwise, it is, I conceive, every man’s duty, if able, to correct them, especially when we consider the high character of the Society for intelligence, by whose sanction and under whose superintendence the work in question was ushered into the world: a Society whose object is not to perpetuate but to correct error, by disseminating truth; and, certainly, the correction of an error, however trifling, under these circumstances, must be commendable.

“I have been led into these remarks from observing a few inaccuracies in this amusing little book, and will briefly state them as they occur.

“In page 6. there is a quotation from the *Quarterly Review*, respecting the introduction of a spurious foreign variety (*sessiliflora*) of our old English oak (*Quercus Robur*); and awful misgivings we ought to have if what

this writer states be true, viz., that, owing to its introduction, there is too much reason to be believe the complaints about the dry rot originated. However, it seems, this impostor 'may thus be discriminated from the true old English oak: the acorn-stalks of the *Ròbur* are long, and its leaves short; whereas, the *sessiliflora* has the acorn-stalks short, and the leaves long: the acorns of the former grow singly, or seldom two on the same foot-stalk; those of the latter, in clusters of two or three, close to the stem of the branch.' This distinction, as far as language is concerned, appears conclusive as to our misfortune; but let us hope that we have not been so long in error on this momentous subject, and that the dry rot has originated some other way. For the *Quercus Ròbur* will, I believe, afford us specimens of both characters, and even sometimes from the same tree; indeed, it is not common to find two alike; and the supposed varieties arising, in my opinion, from circumstances purely local, are sufficient in number to fill up, in every shade and degree, the distinction made between the *Ròbur* and the *sessiliflora*. Nor is this surprising, when we consider that this tree, on account of its great value, has been cultivated, or attempted to be cultivated, in almost every possible situation, and that it has been propagated by seeds alone, for thousands of years, without degenerating.

"But there is one species which, I think, retains its character with more constancy, and probably is the impostor complained of; this is the *pedunculata*, and a most stately and magnificent tree it is; perhaps more generally planted than the *Ròbur*! and for this simple reason, viz. gentlemen, nurserymen, and gardeners, one and all, like to see a fine sample when they either gather or purchase acorns; and the fruit of the *Quercus pedunculata* is usually one third larger than that of the *Ròbur* in trees of equal age and vigour; it is also considered excellent timber.

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Withers, W., Esq., Attorney at Holt, Norfolk; Author of several Tracts on Planting: A Letter to Sir Henry Stuart, Bart., on the Improvement of the Quality of Timber to be effected by high Cultivation, and quick Growth of Forest Trees; in reply to certain Passages in his Planter's Guide. Holt, 1829. 8vo.

We sent this letter to be reviewed by Mr. Gorrie, a gardener and planter of well known science and experience both in gardening and agriculture, who has sent us the following:—

“ This letter, which Mr. Withers has contrived to extend over 133 pages, is the finest specimen of bookmaking we have seen. Sir Henry Stuart, author of the *Planter's Guide*, had, it seems, in that work made some observations on two pamphlets formerly written by Mr. Withers, ‘ stating that their object is to show, that by trenching the ground previously to planting, and by keeping it clean for some years afterwards, greater progress will be made by wood of every sort, and that a greater return will be made to the planter thereby, in ten or twelve years, than in twenty-five or thirty years by the common method, and that the system is not neat,’ &c. Mr. Withers complains that Sir Henry ‘ misrepresents the object of’ his ‘ pamphlets, by confining it to trenching and subsequent culture, the declared object of the first of them being principally to show the effect of *manuring* land for forest trees.’ (p. 14, 15.) Now, we would ask Mr. Withers, does he really estimate the common sense of mankind so low as to believe it necessary for him to write a pamphlet on such a subject? Can they be so thoroughly cockneyfied as not to know, that a ‘ dock will grow on a dunghill?’ Well, it was too bad in Sir Henry, if he attempted to deprive him of the merit of

such an immense discovery ; it was cruel in the baronet to throw cold water on the subject, by saying that ' from the very nature of the thing it is evident that it cannot be adopted for general planting, or ever come into universal use.' (p. 17.) This was rather a home thrust, and Mr. Withers seems to have some misgivings on the vulnerable point ; he is evidently embarrassed. ' I have never,' says he, ' recommended its universal application.' (p. 9.) ' The general adoption of this method of planting *poor* lands would, I feel confident, be attended with great individual and national advantage, and I claim the credit of being its author.' (p. 16.) ' I cannot perceive any thing in the *nature* of trenching and manuring, which must preclude its adoption for general planting, or prevent it ever coming into universal use.' (p. 18.) And neither do we, with this single exception, that manure is not to be had. Every method which ingenuity can invent is resorted to, for accumulating an article of so much immediate necessity. Such is the demand, that it is but lately we noticed in the newspapers an account of a vessel freighted with bones from the *trenches at Leipsic*, bound for Britain, these bones to be ground into dust to increase the stock of manure for agricultural purposes ; and numbers of human teeth may be seen bleaching on the surface of turnip fields, which in all likelihood were lately brought from a similar quarter. If we are (at the expense of the finer feelings of human nature) brought to submit to such shifts for manure where it is indispensable, what degree of ' credit ' can we afford to spare to the man, who, although he ' does not recommend,' yet ' cannot perceive any thing to prevent its universal application to forest trees. The substitute of ' peat moss and lime ' we cannot see to be of universal application. Peat moss is not to be met with every where ; there is nothing deserving the name within twenty miles of the spot where we reside, nor is the situation singular in this respect ; and what is still more unfortunate for its general application, where moss is most plenty, the adjoining waste grounds have often too much peat in the composition of their surface soils to be benefited by such substitute. — Lime indeed might be a sort of panacea alone, in such cases, when there is much vegetable matter in the surface soil to be acted upon, or ferrugineous matter to neutralise ; but then some say lime is not a manure, and, except in cases where coal is near the lime quarry, its application to arboriculture will not pay.

" With regard to trenching, where the subsoil is tenacious, and consists of nothing injurious to vegetation, if the operation of trenching is performed carefully, by mixing the surface mould regularly with the subsoil, a more extended *nidus* will thus be prepared for the roots of the young trees, which for *some time* may prove advantageous ; but soils of this nature are but rarely to be met with in ' waste lands,' and where they are to be found, they are generally of the best description of wastes. Now were the expense of trenching and manuring such lands extensively gone into, and if the happiness of the ' surplus population,' about which Mr. Withers expresses so much becoming concern, occupies so much of his mind, as does his favourite theory of manuring ground for plantations, we would put it to his good sense and good feeling, to say, whether such ' surplus population ' would not derive greater benefit by becoming occupiers of small portions of soil so trenched and manured, at fair rents, the grounds being sheltered with judiciously laid off slips of planting. Would not this enable them to contribute something towards their future subsistence ? For, granting that the trenching, and manuring, and planting system were carried as far as he could wish, a single quartern loaf would not thereby be added to the home produce of human food ; but much pasture, and consequently much animal food, would be for a time withdrawn. The work of planting once accomplished, they would have to emigrate, or still continue in the condition of ' half-starved labourers,' unless they could continue to live on the roots of oak trees, like the mice in Dean Forest. We do not say this to discourage any from the useful operation of planting ; we can have no possible interest to

serve in limiting the employment of the labouring poor; our sincerest pleasure has, for these thirty years past, proceeded from planning and directing such employment; but an indiscriminate trenching of ground for planting would, in many instances, we fear, be attended with less advantageous consequences than Mr. Withers will be willing to admit.

“Where the surplus soil consists of a few inches of peat, or moor earth, incumbent on open gravelly ferruginous subsoil, which, undisturbed, would carry larch and Scotch fir, trenching, we know, from a little dear-bought experience, would be highly injurious, and a great breadth of moorish waste lands is of this description; nor have we ever seen trenching be of any benefit to planting on soft soils where broom predominates. There are numerous tracts of calcareous sandy subsoils, sufficiently porous for admitting the roots of trees, where trenching would render the trees liable to wind-waving, and could otherwise be of no benefit. There are also many swamps on our waste lands, for which effectual draining, paring, burning, and pitting, would be sufficient preparation, equal, if not superior to trenching. Such soils, when properly drained, become sufficiently open, and the spreading roots of trees would soon increase the pulverisation. A melon thrives best when the soil in which it grows is not too much broke, and every farmer prefers land which carries a clod.

“We now come to the ‘sole object’ of the second pamphlet, which ‘was to expose the fundamental errors of Sir Walter Scott’ in his essay on planting. ‘The heresy there broached, that the preparation of land for planting would cease to have any effect after a few years, excited rather strong feelings in the mind’ of Mr. Withers (p. 20.); but what is still more afflicting, his friend, ‘John Kershaw, Esq.,’ who, by the by, seems to speak from experience, and whom he produces as exculpatory evidence, seems a little tinctured with the same heresy. ‘With respect to manure on poor land,’ says Mr. Kershaw, ‘it can be of no consequence, in my opinion, to timber, particularly to oak, as that wholly depends on the subsoil for its growth to perfection.’ (p. 85.) ‘But all the manure and care possible will not produce good oak timber, if the subsoil is not congenial to its nature, although strong plants may be raised *at first*.’ (p. 86.) We confess, too, that we have long been infected with the heresies of Sir Walter and Mr. Kershaw, and our heretical opinions are supported by the following facts:—In field culture, even where additional vegetable matter is afforded by the ploughing in of three ‘white stubbles’ in the course of a six years’ rotation, the dung laid on at the beginning of the course is found to be exhausted by the sixth year on soils naturally the richest; and in poor lands it is found necessary to dung twice in the course of a six or seven years’ rotation! It will not be pretended that forest trees are less greedy feeders than wheat, clover, oats, peas, and barley; every cottager in the kingdom, who has the misfortune to have a forest tree in his garden, and we are sorry to say there are many such, and every farmer who has hedge-row timber on his farm, will bear us out in saying, that the roots of such trees exhaust manure in less than half the time in which it is exhausted by ordinary crops. We do not mean to advocate the cause of Sir Walter Scott. His character as a writer places him above our censure or praise; with men of experience the attack by Mr. Withers on his essay is a sufficient advocacy. Here lies the secret: Sir Walter is a Scotchman, Sir Henry is a Scotchman, and we see what a horrible thing it is in the eyes of Mr. Withers for Scotchmen to write common sense, or to give their opinion on any subject, if it should not exactly correspond with his. We quote the following specimen of his urbanity:—‘These three gentlemen were all Scotchmen, men of rank, and great landed proprietors, and it is natural that Lord Glenbervie, a Scotchman also, should be influenced by their opinions. The Scotch generally practise the pitting method,’ (what an indelible reproach!!) ‘and we see that in the case of Dean Forest, it is more than probable that the opinion of

Scotchmen caused it to be adopted there.' (p. 41, 42.) '*Where wert thou then, Grillon!!!*' We know that Mr. Cobbett was perpetually slashing at Scotchmen, because he found them too knowing to be gulled by his puffing; we have heard that an English drover now and then had the baseness to gibe 'Sawney' with national distinction; but, till we read this letter, we did not believe that there was a man in South Britain (Cobbett excepted), who could sign his own name, capable of displaying so much silly imbecility.

"We have now noticed the 'objects' of the first and second pamphlets. One of the multifarious objects of the present 'Letter' seems to be to contradict an assertion said to be made by Sir Henry Steuart, viz. 'That the culture of the soil will have an effect on the quality of the timber.' The importance we attach to this question will appear from what we have already stated regarding the effects of that culture. Our attention has been more directed to the culture than to the quality of timber; but, in conducting sales, we have uniformly remarked that purchasers preferred ash trees of *slow growth*, to those of the same dimensions that had grown more rapidly. We believe there is much in accidental varieties of the same species, with regard to strength and durability, though cultivated under the same circumstances; this we have observed most conspicuous in the ash, the oak, the larch, and the beech. When Sir Henry contends that a 'certain slowness of growth is essentially necessary to the closeness of texture and durability of all timber,' we do not think he is fairly met by Mr. Withers, or he would not have brought the rapid growth of the locust tree as an instance. The yew tree, as an instance of *slow growth*, firmness of texture, and durability, might in this case be adduced by Sir Henry; and the poplar, as a rapid grower, possessing neither firmness of texture, nor extraordinary durability. Each tree should, in fairness to the question, be pitched against its own species.

"Eighteen letters are produced to show that rapid-growing timber is good in quality, and that manure promotes the growth of trees; these letters serve at least to fill about fifty-six pages of the pamphlet. The second letter is very lengthy, a sort of a rambling review of Sir Henry's book, attempting to display much profound knowledge of arboriculture. 'Sir Henry,' he says, 'in confirmation of his arguments, refers to the Editor of the *Gardener's Magazine*. I am aware that Mr. Loudon is high authority in the present day; no one who has seen his bulky volumes will dispute his claim to very great learning, both in the theory and practice of rural economy; but his great work, the *Encyclopædia of Gardening*, is, in many instances, nothing more than a series of contradictory opinions strung together conjunctively, without any decided opinion of his own to assist the ignorant reader, calculated rather to mislead than instruct.' (p. 71.)

"We reckon it would be a work of supererogation to attempt seriously to refute these ill-natured remarks; the high merits of that work are well known and highly appreciated by every professional gardener who understands the English language. Mr. Loudon does not too often, nor unnecessarily intrude his own opinions, nor does he require the aid of anonymous scribblers to bolster up absurd theories. That work is a faithful record, in an abridged form, of every thing of importance that had been written on gardening up to the time it was published. Any work attempting to reconcile all the conflicting statements that have been written on gardening, or on any other art, would be almost as preposterous as the Letter of 133 pages we are now reviewing. Mr. Loudon did not consider his readers as mere machines, to be impelled by the power of steam; he laid a vast mass of opinions before them, and occasionally his own; thus giving them an opportunity of exercising their own judgment. We do not say that his work is fitted for 'babes in knowledge;' but we know that there is no book in the English language where the *young* gardener will find an equal mass of materials from which he can form his judgment; and, we believe, few will deny that the materials there furnished, and which in his other works that author

continues to furnish, are well calculated for enabling his readers to form a correct judgment, if they have mind to enable them to think. But we must ask Mr. Loudon's pardon for noticing the effusions of this anonymous writer, who, Mr. Withers informs us, is 'a considerable land-owner, and a gentleman.' We thank Mr. Withers for the latter piece of information; for, ten to one, if from his writings we could have made the discovery. How could we? Is it like a gentleman to fire incognito, right and left, and, when his ammunition is spent, to conclude by saying, 'I hope, Withers, you are not sufficiently sick of it to allow these Scotchmen to imagine they have *discomfited* you.' (p. 75.) This, we are willing to believe, is not a fair specimen of an 'English gentleman.' It is unnecessary for Scotchmen to give themselves any trouble about 'discomfiting' Mr. Withers. He has taken the matter into his own hands, and is perhaps the best hand in the world for 'writing himself down.' — *Archibald Gorrie. Annat Gardens, Dec. 25. 1829.*

Harley William: The Harleian Dairy System, and an Account of the various Methods of Dairy Husbandry pursued by the Dutch. Also, a new and improved Mode of ventilating Stables. With an Appendix, containing useful Hints (founded on the Author's Experience) for the Management of Hedge-row Fences, Fruit Trees, &c.; and the Means of rendering Barren Land fruitful. London, 1829. 8vo. 21s. bds.

Mr. Harley had the merit of introducing various improvements in the neighbourhood of Glasgow, besides his dairy system, such as warm baths, a baking establishment; and he gave a powerful stimulus to the spirit of building in the Willow-bank suburb. Like many practical men, however, he is but a poor book-maker, and has produced a bulky volume, rather dull and heavy to read. His dairy system is essentially that of the Dutch and Flemish; and the only novelty that we can find in his manner of treating pigs is that of having a trough of water as a sill to the opening which separates their feeding place from their sleeping place; so that the animal cannot pass from the one to the other without wetting, or, as Mr. Harley says, washing, its feet. The utility of this conceit may be questioned. We know Mr. Harley personally to be a worthy good man, and wish, for his own sake, he had published a half-crown pamphlet with wood-cuts, instead of his guinea book with copperplate engravings and his own portrait.

M'Intosh, Mr. Charles, C.M.H.S., Gardener to Prince Leopold at Claremont, Author of the *Practical Gardener and Modern Horticulturist: Flora and Pomona; or, the British Fruit and Flower Garden: containing Descriptions of the most valuable and interesting Flowers and Fruits cultivated in the Gardens of Great Britain, the Period of their Introduction, Botanical Character, Mode of Culture, Time of Flowering, &c.; with a Definition of all the Botanical and Classical Terms which may occur in the description of the respective subjects. To which will be added, Instructions for Drawing and Colouring Fruits and Flowers, with Directions for mixing the Colours, &c., by Mr. E. D. Smith, F.L.S.* London. In Parts. 8vo, plates plain in outline, 1s. 6d. each Part; coloured, 2s. 6d.: 4to, plain, 2s.; coloured, 3s. each Part.

Bishop, Mr. David: Causal Botany; or, A Treatise on the Causes and Character of Changes in Plants, especially of Changes which are productive of Subspecies or Varieties. London, 1829. 8vo. 8s.

This is an original work on a subject of far more importance than would at first view appear from its title. The author, a scientific botanist, and a practical gardener of great and varied experience, shows that all improvement in the plants of agriculture and horticulture, with reference to man, is to be sought for in subspecies or varieties. We have already alluded to the importance of this subject (p. 62.), and in our next Number shall examine Mr. Bishop's treatise in detail. In the meantime, we can safely recommend it to public patronage, as one of the most original works on the science of vegetable culture which has appeared in our time.

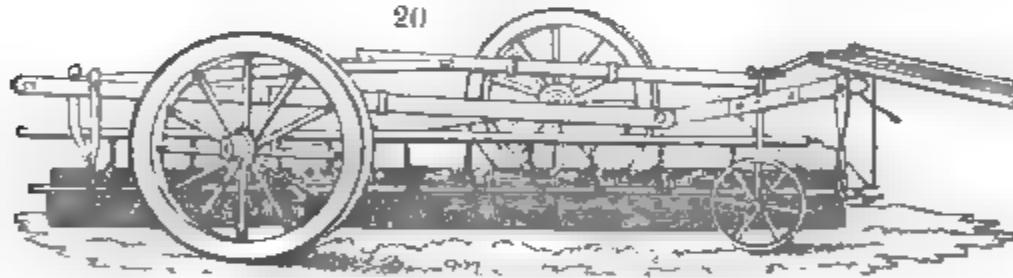
PART III.

MISCELLANEOUS INTELLIGENCE.

ART. I. *General Notices.*

SCRAPING and sweeping Roads.—We rejoice in every invention calculated to lessen the number of human beings put to clean or mend roads, and therefore have great pleasure in laying two inventions by Mr. Boase before our readers, which will henceforth, wherever it may be thought fit to employ them, render sweeping unnecessary in towns, and scraping in the country. The two operations of scraping and sweeping were originally performed by one machine, the brooms and scrapers being attached to the same frame: but it was found, on trial, that either operation rendered the road sufficiently clean; and Mr. Boase accordingly made distinct machines for each purpose, of which the following is his description:—

The Scraper (fig. 20.) consists of an oblong frame of iron, supported on three wheels, two of which are common carriage-wheels, about 3 ft. in diameter, working on an axle fixed to the frame: the third is a small cast-

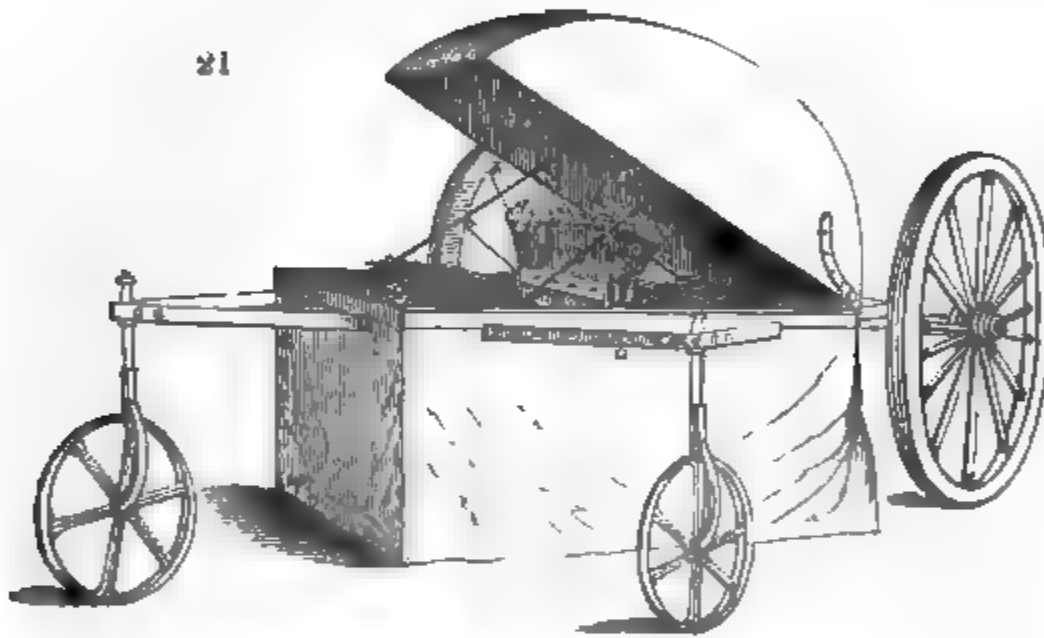


iron one, placed under the centre of the front bar of the frame. Below the frame, and obliquely to it, is placed the flexible scraper, consisting of a number of plates of sheet-iron, arranged in a line, and connected to each other by small bolts. On the back of each plate is bolted a piece of iron, in the shape of the letter T inverted: the stem of this iron is continued to the upper end of the plate, and then bent forward in a horizontal direction to a shaft (secured to the frame) parallel to the scraper, at the distance of about 18 in. from it, to which it is joined. By this arrangement, when the machine is moved forward, the shaft draws after it the series of plates forming the scraper, which being attached to each other by joints, or bolts acting as such, each plate has sufficient freedom of action to adapt itself to the inequalities of the surface. Springs, equal in number to the plates, are fixed to the shaft, by which any degree of pressure required can be given to the scraper. As the machine proceeds, a portion of road, equal in width to the quadrilateral figure of which the scraper forms the diagonal, is cleared; and the mud or dirt, as fast as it collects, is slid off by the oblique surface of the scraper, and finally left in a line on the off-side of the machine. This process is commenced near the centre of the road, and the machine, having gone a convenient distance in a straight line, is turned and brought

back on the other side of the centre, removing the dirt in an opposite direction. For the next course the machine is brought to the side where it first acted, and removes the dirt from a like portion of ground, and with it the line formed by the preceding course. This is continued until the scrapings are brought to the side of the road.

The manager is enabled to lift the scraper by turning a wooden roller fixed above it, and attached to each plate by a corresponding chain. This is done in order to pass over parts of roads recently repaired; and, when going to work or returning, the plates are kept in this elevated position by a ratchet and catch at the end of the roller. A curved scraper is attached to the back part of the frame at the off-corner, to be used only during the last course of the machine, for the purpose of collecting the scrapings into heaps ready for removal.

The Sweeping Machine (fig. 21.) has a frame similar to that of the scraper, supported in front by two common wheels about 4 ft. in diameter, and behind by two small iron wheels with vertical axles, one under each



corner. Within the frame, and diagonal to it, is the cylinder of brooms, consisting of five rows of heath, each row secured between two boards by screws, and attached to an axle by radiating arms of cast-iron. This receives a rotatory motion from the carriage wheels, by means of a beveled-tooth wheel fixed on their axle-tree, working in another half its size on the axle of the brooms. When the machine is drawn forward, the brooms are thus made to revolve twice to each revolution of the carriage wheels, and in an opposite direction to them. The brooms are regulated so as to bear more or less on the ground, according to the state of the dirt; and, as the heath wears shorter, they can readily be drawn out from the centre, in order to preserve a proper bearing. The dirt is removed from the space over which the brooms pass to the right or off-side of the machine. Like the scraper, the work is commenced near the centre of the road or street, and carried on in a similar manner. When this machine is wanted to proceed without sweeping, the larger beveled-tooth wheel is thrown out of gear by a lever for that purpose. The brooms are covered and the frame enclosed by oil-cloth, to prevent any splashing or dirt from escaping beyond the machine.

The Scraping Machine, drawn by two horses, and attended by one man, will clean five miles of road, 24 ft. wide, in eight hours. Two additional men will be required to throw the scrapings off the road, and clear the water-

courses. The same work would require twenty-five men *per diem*, with scrapers, according to the present method.

Comparative Expense.

Machine.	{	Two horses, at 6s. each	-	£0	12	0	}	£1	0	6
		Three men, at 2s.	-	0	6	0				
		Wear and tear of machine, &c.	-	0	2	6				
Manual	{	Twenty-five men, at 2s. each	-	2	10	0	}	2	10	6
Labour.		Wear and tear	-	0	0	6				

Daily saving - - - £1 10 0

Supposing a road would require cleaning but twice a week,

the yearly saving at this rate would amount to - 156 0 0

If but once a week, to - - - 78 0 0

On only five miles of road.

The Sweeping Machine, with the same power and attendants, is capable of cleaning three miles, 20 ft. wide, daily. — *John Boase*. 53. *Albany Street, Regent's Park*, Nov. 23. 1829.

New Mode of propagating the Pæonia Moultan. — Our readers will recollect Mr. Maund's promise (Vol. V. p. 526.) of a mode of propagating this splendid and most desirable plant, that would enable the nurserymen to sell them at 1s. each; he has now fulfilled it; and, for the benefit of those who do not possess his elegant work, we quote it at length, well knowing Mr. Maund's liberality, and that the love of nature more than the love of money stimulates him as an author.

"In February select any of the stems of the *Pæonia Moultan*, or all may be used: and at the distance of half an inch from the centre of each bud, both above and below it, cut out entirely round the stem a small ring of the bark, rather more than the sixteenth of an inch wide, in the manner of common ringing, as practised on fruit trees. Thus every bud will occupy one inch of the stem, where the direct continuation of its bark is obstructed, both above and below, by the rings which have been cut out of it. The stems so prepared are then to be laid horizontally about 3 in. beneath the soil, leaving only the leading bud at the end of each branch above the surface. In six months every bud will have made a vigorous shoot, and, in general, will have two radical fibres at its base. In August remove the soil from above the layers, and having raised the newly made roots, carefully separate each young shoot from the main layer, by passing a small knife from one ring to the other, cutting out about one third part of the old stem. The young plants should then be immediately potted, to remain till they are required for planting out in their final situations. After thus gathering the first crop of young plants, the old layers should be again covered with good soil, and left as before; and in the following summer a second and greater crop of plants will be produced than in the first season, and, what is most remarkable, they will issue from various parts of the stem, where no trace of a bud was previously indicated.

"Again, if a stem be detached from the parent plant and treated as described above, and then laid in soil in a pine-pit or stove, it will shoot almost as freely as if connected with the original root.

"In another experiment, cuttings, of about an inch in length, were made of the *Pæonia Moultan*, in the manner of vine cuttings, having one bud on each, and about half of the stem behind the bud slit up, and the pith removed. These were put 3 in. deep in pots of soil, and plunged into an exhausted bark bed, having a temperature of about 60°. In the space of two months, these cuttings made young shoots through the soil, and grew freely.

"The above ready methods of propagating a plant hitherto expensive are truly valuable: they are not the results of our own experience; but we witnessed the success of part of the experiments, and can rely upon the accuracy of the whole." (*Botanic Garden*, part v. No. 241.)

Indian Corn.—Produce, upwards of 105 bushels an acre = 3 tons of good meal for feeding stock. Wheat, barley, peas, or beans will not average 15 cwt. of meal per acre. Cobbett's, i. e. Nova Scotia, corn used. (*J. Moore, Sandy Beds, in Farm. Jour. of Nov. 9. 1829.*)

ART. II. Foreign Notices.

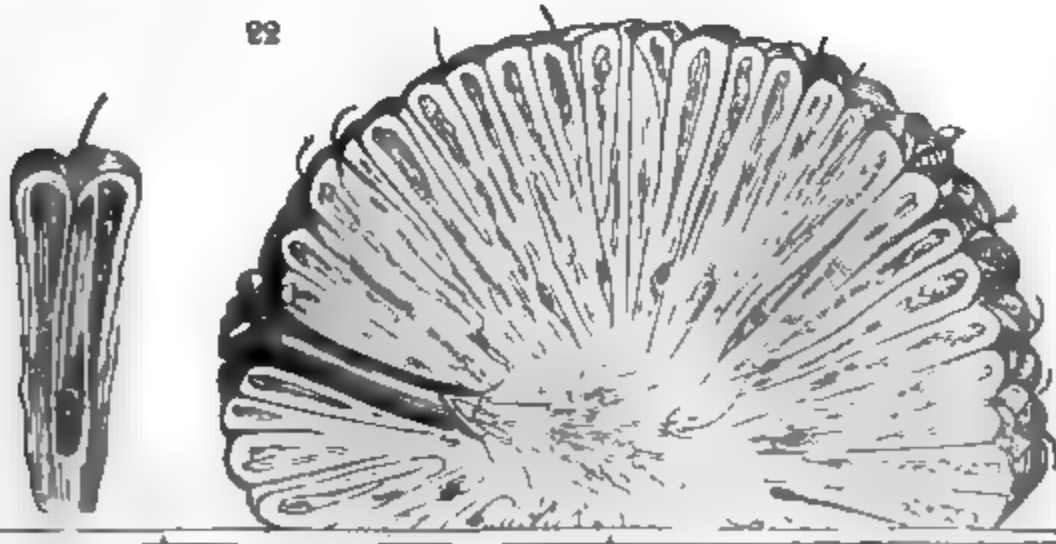
NORTH AMERICA.

GENERAL Education.—I enclose you two annual reports, one of the commissioners of common schools, and the other from the board of regents of our university, of which I have the honour to be a member, in order to give you an opportunity of judging of the means provided by the government of our state, for disseminating, among all classes, the blessings of education. We are yet very deficient in elementary books, adapted to our principles of government, and the future employment in life of our youth. Our legislators are not yet capable of appreciating the importance of science to the productive labours of society, nor the influence of refinement in rural pursuits upon the morals and happiness of society. Yet we are making rapid progress; and in our country, where constant intercourse is had between the inhabitants of remote sections, every useful improvement is disseminated with uncommon speed. You may form some idea of the travelling propensity of our population, when I state, that, during the summer months, 130 stages, and from six to eight of the largest steam-boats in the world, arrive at and leave this city daily, bringing with them and carrying out, on an average, 2000 passengers daily. I have travelled to Philadelphia (260 miles) in 24 hours, at an expense of 6 dols. The fare now, including board 160 miles, is but 3 dols. 50 c. — *Jesse Bucl. Albany, New York, July 24. 1829.*

The Horticultural Society of Philadelphia, Dr. Mease informs us, "are duly sensible of the kindness of Messrs. Noble and Jessop, in sending them sea-kale and rhubarb seeds;" and he has requested us to thank them in the name of the Society, which we now do. The seeds, Dr. Mease states, are growing finely. — *Contd.*

Maclura aurantiaca.—Dr. Mease has sent us a specimen of the fruit of this tree, which grew in the nursery of Mr. M'Mahon near Philadelphia. "It weighed 15 oz. when pulled, but it is not ripe. I see no reason why this tree should not bear the open air in England [it does, quite well]; but, I presume, a green-house would be necessary to bring the fruit to maturity." We have had a drawing and section of it made, of the full size, by Mr.

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Sowerby. (fig. 22.) It measures 9 in. round, one way, and 9½ in. the other. The colour is a greenish yellow; the taste acid, it not being half ripe.

We should be glad if Dr. Mease would supply us with any further information in his power respecting this fruit ; its taste, when ripe, in a wild state ; whether cultivation has yet had any effect on it ; and whether he thinks it likely ever to become useful in the kitchen or the dessert. — *Cond.*

Massachusetts Horticultural Society. — This Society was established in February, 1829 ; and we have just received a pamphlet, containing the charter, constitution, by-laws, &c., of the Institution, with a letter announcing our being elected an honorary member. For this honour, which we duly prize, we hope the present acknowledgment will be deemed satisfactory. The constitution of the Society is modeled a good deal on that of London ; the by-laws, however, are of quite a different description : there is no gagging clause ; and there is an article which provides that “ lecturers on botany and vegetable physiology, on entomology so far as it relates to horticulture, and on horticultural science, shall be appointed. They shall be nominated by the council, at a stated meeting of the Society, and elected at that or a subsequent stated meeting, by a majority of votes.” There is something grand and refreshing in the simple form of the Act of Incorporation, as compared with the highly aristocratical royal charters of the London, Paris, and Berlin Societies. In the printed letter, he informs us that, for such favours of seeds, plants, scions, or trees, as may be procured or transmitted to the Society, it will afford them “ great pleasure to reciprocate.” — *Cond.*

Brússica olerácea var. arboréscens. — This valuable plant has been, this month, introduced into Philadelphia. Mr. Elias Durand, an apothecary, who knew its value in France, sent to his brother for a parcel of the seed ; and he lately received 2 lbs. of it, which he presented to the Horticultural Society of Pennsylvania. It has been widely distributed, and we promise ourselves great benefits from the naturalisation of the plant. In the southern states, where artificial grasses are but rarely attended to, these cabbages will be invaluable for stock. In this state, and further north, they will require to be protected by Indian corn stalks, capped by a sheaf of straw, during the winter. Mr. Durand says that the leaves, in France, are constantly used in soup ; and that, after they have been bitten by frost, they are delicious when boiled. The same remark is made in respect to the sprouts, which succeed in the autumn to the leaves previously detached. As “ bacon and greens ” constitute a dish as fully national in the southern states as the *pot à feu* among the *tiers état*, or soup with the *bonnes gens* in France ; the abundance of food which this cabbage furnishes to man and beast will render it a favourite vegetable with the people of the south, among whom, with some exceptions, horticulture, I am sorry to say, is little attended to. — *J. M. Philadelphia, April, 1829.*

ART. III. Domestic Notices.

ENGLAND.

The Medico-Botanical Society. — There has lately been, what is vulgarly called a “ blow up ” at this Society, and our active friend, Mr. Frost, the founder and director, has, it is said, lost his directorship. The entire Society, we think, might have been “ blown up,” without any loss to the public. The object of the Society is to look out for new medicinal plants ; but we cannot bring ourselves to attach much importance to the multiplication of medicines. The Society, however, go upon the old doctrine of specifics, and are looking after them. But it is well known that as the healing art has improved, the *materia medica* has diminished. As mankind become enlightened and ameliorated in their physical condition, there will be proportionably less occasion for both medical men and medicines. One of the greatest opprobriums of the metropolis is the multitude of chemists’ shops, and shops for patent or quack medicines, in which are displayed an array of phials of wrath truly alarming to the imagination. A healthy state of society, by which we mean a state in which every man and woman is actively and usefully employed, will require little more doctoring than what every individual may do for himself or his family ; with the exception of the office of the surgeon. Nine tenths of the diseases in England, among the active classes, are the consequence of bad or insufficient food ; and, among the inactive classes, of too much or too rich food, and the neglect of exercise. Every medical man knows this, and knows also that when the time comes in which labour and property shall be more equally distributed, as, for instance, they are at present in France, what is called the respectability, that is the money-making part, of the physician’s occupation, will be gone ; the guinea trade will cease. With this view of things, we consider the Medico-Botanical Society as one of the least necessary

that exist, though we admit it is always good to promote the personal assemblage of literary and scientific men, whether in a society or a club-house : we confess we prefer the latter, as every thing connected with letters ought to be republican rather than autocratic. Free personal intercourse, in our opinion, is the chief good which has resulted, or can, or ever will, result, from literary and scientific societies as such, from the Royal Society downwards. No great mind will ever set much value on the medals or other rewards granted by such societies ; the public voice can alone bestow a reward worthy of the greatest minds.

We cannot quit the subject of the Medico-Botanical Society without noticing the fact of its reckoning among its members almost all the crowned heads of Europe, and a great many of the public characters of all countries. There are, we are told, eleven or twelve kings, and some hundreds of titled nobility. The merit, such as it is, of bringing these names together, belongs entirely to Mr. Frost, and as that gentleman cannot be considered as eminent either in science or in rank, the fact of his having had so much influence shows the possession of some extraordinary tact. The foreign monarchs were evidently not enlisted against their will, for three of them have conferred on Mr. Frost orders of knighthood, and the Duke of Cumberland created him surgeon-extraordinary. It is, however, extremely difficult for kings and princes to distinguish brass or mosaic from sterling gold. They accept the currency of the day, provided it will but pass, and looks bright to the eye. We scarcely think there is an instance of success parallel to it, except that of Mr. Sabine in the Horticultural Society. The test of any principle, it is said, is to push it as far as it will go ; but this test, it would appear, was too much for Mr. Frost's principle of action, whatever that may be ; for the Duke of Cumberland, who had consented to become president of the Society, has withdrawn his consent, and deprived the Knight of the Polar Star of the office of surgeon-extraordinary ; and the Society have deprived him of the office of director, by abolishing that office. We hope these reverses of fortune will be useful to Mr. Frost, and that the history of this Society will not be lost on the scientific part of the public. — *Cont.*

The Colosseum, Regent's Park. — The panoramic view of London is finished, and this picture, and several other things here, are well worth going to see. It is deserving of remark, that the picture is seen to most advantage in a foggy day, and the reason is, the light thrown on it is received through the dome at the height of upwards of 100 ft. from the surface, and consequently through a less dense stratum of fog. The spectator, on arriving at the gallery from which the view is obtained, cannot help imagining that he is in a different country, or that the day has suddenly become clear and fine. This is calculated to give a good idea of the value of elevated situations and lofty buildings in such a valley as that of the Thames ; and if a wealthy man were to build a lofty house, with his living rooms at the top, and all his offices, even to coach-houses and stables under, we do not see that he could do better, than have a balanced platform, like that at the Colosseum, for ascending and descending. This platform is a small room, balanced by two iron weights, exactly on the principle of the common chandeliers in churches. The motion is procured by a man in a concealed situation operating on machinery ; but it might easily be communicated by the party to be raised or lowered, in the manner adopted in Bentham's Panopticon, as executed by General Bentham at Petersburg.

Among the models in the Saloon of Arts, we observed one, by Mr. Fowler (the ingenious young architect who reduced to regular architectural design the magnificent conservatory at Syon House), of a market intended for Covent Garden, but not exactly the design now executing. The same artist has since formed a design and model for Hungerford Market. It is gratifying thus to see the public attention directed to the improvements of buildings and establishments of common every-day use. How incomparably superior in every point of view are such public monuments as the bridges over the Thames, the London University, the Hungerford Market just completed, and the Covent Garden Market far advanced, to the columns, obelisks, and pyramids, proposed by some architects to be erected to commemorate the late peace, or the battle of Waterloo ! The age for useless national monuments is gone, and, we trust, for ever. The builder, who erects such a line of street-houses as that of Anderson in the Regent's Park ; and the association, parish, or proprietor, that erects such bridges and markets as those which we have mentioned, and such public offices as those of Day and Martin in Holborn, Hoare in Fleet Street, or Thompson and Fearon in Bond Street, deserve far more of their country, than the designers of triumphal arches, metropolitan gateways, and other architectural extravagances, which, in as far as they can have any effect, are calculated to carry the mind back to ages of tyranny and slavery, instead of forward to equality and liberty.

The line of conservatories is completed, and, considered as a passage, it is tolerable. There is a fountain, consisting of a circle of jets, which throw

the water up, in the form of a cone, into a basin on the summit of a column of shellwork ; through the bottom of that basin the water runs into the buckets of an overshot wheel, which, being disguised by shellwork, turns the shells continually, and for that kind of beauty is very effective.

The view from the Swiss Cottage is to rockwork and a waterfall ; the rockwork is an imitation of a broken stratified precipice, and is admirably done. A part of this rockwork was superintended by Mr. Paris, the eminent artist, and the remainder by Mr. Gray, also an excellent artist both in architecture and landscape, who designed and executed the shellwork of the fountain, and a great variety of other improvements within and around the Colosseum. Mr. Gray is one of those variously talented men, who are sometimes produced by accident. He can draw every description of subject, and that accurately and beautifully ; engrave both on copper and stone, model, measure, calculate ; he is a turner, was brought up a cabinet-maker, and has been in business as an upholsterer ; he understands something of gardening and laying out grounds, and in every thing he undertakes evinces a ready and fertile invention. Such a man, about a great nobleman's house, would be invaluable, particularly where theatricals were to be got up, pictures to be hung and kept in repair, or where there was much valuable furniture to keep in order, or new buildings or alterations going forward.—*Cond.*

Sabots. — Sir, I feel obliged by your hint respecting the French sabots. I have generally eight or nine young men, and a large share of winter nailing, and I have often thought of having the kind of clogs used by coachmen in washing their carriages ; but these are not to be had here. I have now ordered twenty pair of the sabots of Mr. Smith, nurseryman, Worcester, which, I hope, will be the means of introducing them into that district, as well as into this neighbourhood. I do not notice this with the view of your reward, but to encourage emulation. I am, Sir, &c. — *John Mearns.* Oct. 10. 1829.

The Ploughing Match of the West Kent Agricultural Association, the founder of which was Mr. Dickson, the very intelligent and active occupier of the farm of Kidbrook, near Deptford, took place Nov. 3. The great object of the association is to introduce two-horse swing ploughs ; seven of these started, "on a piece of pure clay," but we are told that this clay was in such a state that the teams could only get through their work "by snatches." We notice the statement chiefly for the sake of hinting at the great disadvantage to the landlord, the farmer, the community of England, and we may say to the whole world, of that monopoly which forces such land into cultivation. If the trade in corn were free, no such soils in a moist climate would ever be ploughed at all ; they would be employed in the production of cheese, butter, and butchers' meat, or they would be planted. In either case the public would gain. It is now perfectly clear to us that land may be ploughed incomparably cheaper by steam than by horses, the engines being stationed from point to point, in the manner of the fixed machine employed in drawing Lumbert's mole plough ; and whenever this shall take place generally in the corn countries of Europe, the price of corn must inevitably fall so low, that only the best corn soils will for a while be cultivated. Then will be found the advantage of having grass-lands and woodlands, and the parks and lawns of England will be found doubly useful and ornamental. — *Cond.*

The Invention of a Steam Plough. — Henry Handley, Esq., of Culverthorpe, near Sleaford, in Lincolnshire, has, in the *Farmer's Journal* of December 14., offered a reward of one hundred guineas for the invention of a steam plough. We cannot but highly applaud such a spirited proposal, and we are convinced that a very few hundreds more would produce the invention. A very little reflection will convince both landlord and tenant that they would be great gainers by the substitution of steam for horses in ploughing, harrowing, and thrashing, if not in reaping and other operations. Less capital would be required of the farmers, who would, at the same time, have more disposable produce. — *Cond.*

New Alms-houses at Edgware. (Vol. V. p. 558.) — We were not aware, when we mentioned these buildings, rather in a heedless way, that they were erected at the expense of Miss Day, a young lady just come of age. Mr. Day and his family deserve the highest applause for the taste and spirit which they have displayed in architecture. Mr. Day's mansion and offices in the New Road, near Mary-la-bonne church, is exteriorly one of the handsomest in that part of London: the new front, erecting, in a beautifully coloured stone, to the manufactory of Day and Martin in Holborn, will rank with that of Hoares' banking-house in Fleet Street. Mr. Day's country-house at Edgware is also architectural; and a lodge recently erected there, of which we wish the architect (whose name we do not know) would enable us to give a figure, is very handsome, and, what is better, obviously commodious within. Lastly, Miss Day's alms-houses, which, it is said, are to cost 10,000*l.*, may be compared, in style and neatness, with those of Saint Catherine in the Regent's Park. Mr. Day, whom we know to be a cultivated and highly intellectual man, has for some time past laboured under the dreadful misfortune of the loss of his sight. We cannot help often wishing, in passing his different edifices, that he could see them and admire them as we do. Only one suffering can be greater than the loss of sight, the loss of reason; but the loss of sight, like all losses short of the loss of reason, may be borne by a calm and a philosophic mind, previously stored with various and useful truths. Such a mind is Mr. Day's. It must be a consolation to him to reflect that he has added objects of surpassing beauty, to a metropolis already abounding in architectural productions. — *Cond.*

The Spectator. — In recommending certain newspapers (Vol. V. p. 604.) we inadvertently omitted this very superior weekly publication, which, taking it altogether, is perhaps the very best weekly political and literary journal now published. Twelve gardeners joining together might read it for a year at the rate of 3*s.* 3*d.* each. — *Cond.*

The Country Times. — A weekly paper of this title has just commenced, the object of which is chiefly to supply professional and agreeable miscellaneous reading to the English farmer. We do not know what may be the politics of this paper; but we hope it will steer a different course from the *Farmer's Journal*, which, with the intention of doing the farmers a service, has, we firmly believe, had a contrary effect, by concealing from them what they will ultimately find to be true, viz. that there is no safety for either farmer or proprietor but in a free trade. We recommend to the editor of the political department of the *Country Times* the following passage in a recent leading article of the *Times*: — "The interest of the tenant is the same with the interest of the community; it is to have land open, and prices low. The landlord passes a gross cheat upon his tenantry when he persuades them that *they* are benefited by *his* enormous rents. The 'agricultural interest' is properly the interest of those who till the ground; and they who cry out in favour of a corn monopoly speak only on behalf of those who wring from the tenant the highest possible tax on his skill and industry, and capital employed in agriculture; namely, on behalf of the gentlemen owning and living out of their land." (*Times*, Jan. 4. 1830.)

Speaking on the same subject, with reference to America, the *Morning Chronicle* observes: — "Let both nations retrace their steps; let England encourage the application of American capital to land, by offering a ready market for agricultural produce of all kinds; and America cease to encourage, by restrictions, the application of capital to manufactures. In this way both would thrive. Our landlords would gain by the most unlimited importation, for we could only import by exporting the produce of our own industry in return; and what a market would besides be opened by the purchases of an increasing manufacturing population for all the products

of agriculture which cannot be imported ! Let our landlords abandon the absurd idea that they can gain by monopolies, which deprive industry of the means of purchasing." The *Globe*, the *Scotsman*, the *Spectator*, the *Examiner*, and many of the country papers, concur in these views, and believe with us that the interests of the agriculturist and the manufacturer are essentially the same.

The editor of the professional and miscellaneous department is a particular friend of ours, of various scientific acquirements, and of very considerable experience in the management of landed property, and as a rent-paying farmer on a large scale in Lancashire and Norfolk. A new feature in this paper is that of embracing horticulture ; on which account it deserves the particular patronage of gardeners. — *Cond.*

Methley's Fire-places have been recommended by us (Vol. V. p. 238.) as more to our taste than any which we have ever seen. We have this winter had a good opportunity of observing to what a very considerable extent these fire-places burn their own smoke, more especially when a large fire is kept up. We therefore again recommend them ; and at this season, when heat forms an important subject of consideration, we would also call attention to Mr. Cottam's mode of heating the rooms of a house, or an office, library, or conservatory, by circulating hot water from the boiler of a common kitchen range ; and to the great improvement on Sylvester's mode of heating, by White and Veitch. — *Cond.*

Sylvester's Mode of heating by hot Air is admirable both as a system of diffusing heat and of diffusing fresh air ; but, in London at least, it has two objections, that of being very expensive, and of carrying in dust to the rooms. Messrs. White and Veitch have succeeded, if not in entirely removing, at least in greatly alleviating, these objections. That of first cost they have lowered fully one third, by the employment of a cylindrical cockle of more than double the height of Mr. Sylvester's, and by heating the air by simply passing it in a thin stratum between this cylinder and a cylinder of brickwork, every where of equal width, and perfectly smooth. The air passes so rapidly that it is not burned. Those who are acquainted with the intricate but highly scientific form of Mr. Sylvester's cockle, will easily conceive that Mr. Veitch's must come much cheaper at first, and be less likely to go out of repair afterwards. The air is freed from the dust or soot, which it holds in suspension, by passing it over water before it enters the funnel which conducts it to the cockle to be heated. It may easily be conceived how this may be done, and that different modes may perhaps answer equally well. Mr. Veitch collects the air from four openings in opposite directions into one perpendicular funnel, perhaps a foot in height ; he next spreads it thinly over a surface of perhaps two square yards of water ; from this it rises several inches, and, descending 2 or 3 ft. in four thin sheets, it is again united over a broad surface of water, and thence passes into the funnel leading to the cockle. The water is renewed once a week, and is found to contain a considerable deposit, the grossest in the first or upper basin. The objection that immediately occurs to passing the air over water is, the moisture that it will take up ; to which Mr. Veitch replies, that when fires are wanted in his cockles, or those of Mr. Sylvester, the open air is at a temperature which scarcely admits of any evaporation. This purifier of the air may be placed before the entrance to the funnel of any of Mr. Sylvester's stoves ; and we have no doubt it will be adopted by all who have an opportunity of witnessing its effects. Mr. Veitch has applied them at the British Museum, the Post-Office, and at the London University. Heating by hot air requires a great deal more fuel than heating by hot water, which, whether in dwelling-houses or hot-houses, is the most economical of all modes of heating ; but the hot-air system must be more healthy, because the air is continually renewed. To render the hot-air system perfect, at least for small houses, it should be connected with a

Kewley's regulating thermometer, to lower a sluice or valve to the cold-air funnels whenever the temperature in the hot-air funnel fell below 55°. We have suggested to Mr. Cottam, how very easily this might be done.

Since writing the above, we have seen Mr. Cottam, who has described to us a mode which he has most successfully adopted, in a large mansion, of heating air by hot water, and which appears to us to possess two important advantages over even the improvement of Messrs. White and Veitch; those of costing less at first erection, and of requiring less fuel afterwards. It seems to us that Mr. Cottam's improvement only requires the introduction of a regulating thermometer, to render it by far the most perfect heating apparatus which has yet been invented. — *Cond.*

SCOTLAND.

Edinburgh Fruit Market. — Sept. 26. Fruit is uncommonly abundant this season, and consequently it is selling remarkably cheap. Baking apples are selling at 1s., and best at 1s. 6d. a peck of 16 lbs. Pears are nearly over. Magnum Bonums are from 8d. to 1s. a dozen. Orleans, 4s. a peck. Black damsons are selling at 6s. a peck. Last year they sold from 18s. to a guinea the gallon, that is, one peck and a half. Grapes are 1s. 6d. to 1s. 10d. a pound. Black damsons, from Cheshire, known as the Wine Grape damson, sell at 2½d. per pound. (*Scotsman.*)

Dec. 26. Pine-apples sell at 6s. 6d. and 8s.; foreign grapes at 1s. 3d. to 1s. 6d.; Scotch ditto at 2s. to 2s. 6d., and American pippins and French rennets at 6d. to 8d. a pound. Malaga oranges are in the market, and sell at 1s., and pomegranates from 4s. to 6s. a dozen. Portugal onions sell from 4d. to 5d., filberts at 1s. 3d., and Spanish melons at 11d. and 1s. a pound. Honey is scarce, and sells from 10s. to 15s. a Scotch pint, weighing 5 lbs. (*Ibid.*)

Certain Improvements in Garden Syringes have been made by Mr. D. M'Dougal, of Edinburgh, horticulturist, for which he has taken out a patent, dated Nov. 10. We shall be glad of further particulars. — *Cond.*

Labourer's Cottages. — In this country the cottage of the labourer is never (with hardly one exception) picturesque nor so comfortable as it might be; consisting, as you are aware, of two side walls and two gable ends, the door in the centre of the house, and an apartment at each side, with the fire-places in the gables, and not even a porch to break the dead appearance of the side wall, and contribute warmth to the house. By such cottages the most picturesque scenery is destroyed. From your intended designs in the Gardener's Magazine* I anticipate two results: that gentlemen will not destroy the scenery upon their estates by any longer allowing the present style of building to be continued; and that, from the comfort and elegance afforded by your designs, the labourer will consider himself in honour bound to attend to his cottage, and even acquire a taste for having it, inside and out, more tidy than it is too frequently found. I allude to Scotland only; where, however, there has been great improvement in that respect of late years. I think nothing contributes more to the sobriety, comfort, and cleanliness of a labourer, than a taste for gardening, when it can be instilled, and which, I think, a proprietor ought to promote by every means in his power. I have seldom known a labourer who was fond of and kept his garden neat, whose house and family also were not so, and who did not spend

* We have upwards of two hundred of these designs ready for the engraver, and intend to publish part of them in the Magazine, and part of them separately. In the mean time, we can furnish copies of them, and send a young architect to direct their execution, to any part of the country, at a very moderate charge, and on the shortest notice. Any gentleman, on calling here, may turn over the whole two hundred finished drawings, and make his choice, and have working drawings or models made. — *Cond.*

his leisure hours with them, and in his garden, instead of in the alehouse. I have generally found them fond of gardening; but, for want of sufficient knowledge, they often get disgusted by their not succeeding to their wishes. Most books upon the subject are beyond their means, and too voluminous, and, for a proprietor who wishes to promote the science, too expensive to present to all his cottagers. Could you inform me of any concise publication upon the subject, mentioning briefly the proper time for sowing the different vegetable seeds, the treatment in the seed-bed, &c., the time for transplanting, &c., and for the management of such fruits as a labourer might have in his garden, to the great additional comfort of his family, without his incurring any great additional expense or trouble? — *R. C. Kirkliston, Aug. 22. 1829.*

The late Mr. Nicol wrote such a work as *R. C.* wishes for Scotland, and Mr. William Salisbury for England; but they have both been for some time out of print. With a view to the same objects, we offered premiums (Vol. V. p. 713.); and we have received three most excellent essays on the subject, the best of which, with notes from the others, we shall put immediately to press, and publish, along with a model plan of a cottage, in a one shilling pamphlet. As such a publication will not bear the expense of advertising in the newspapers, it will only be known to the cottagers through the readers of this Magazine. — *Cond.*

ART. IV. *Retrospective Criticism.*

Mr. KNIGHT's Pines. — Sir, I beg to trouble you with a few lines, in consequence of observing, in the last Number of your *Gardener's Magazine* (Vol. V. p. 717.), an account given you by my friend Mr. Mearns, of a journey which we in company had made to Downton Castle, and of my conversion, "under certain circumstances," to Mr. Knight's mode of pine culture.

The great luxuriance of Mr. Knight's plants afford sufficient evidence of the practicability of growing the pine-apple without the use of the bark-bed. So far I am perfectly convinced; so far I never doubted. But the idea which struck me when I saw his plants in October last, and also when I saw them in the spring of 1826, was, that the plants, though strong and healthy, did not produce fruit proportionably large. My friend must, therefore, have misunderstood me in conceiving that I had become a convert to Mr. Knight's mode of culture; for I am not yet thoroughly convinced of its being the most eligible: I am only convinced, as I have already stated, that the pine-apple can be cultivated in that way.

My opinion is, that the common mode of culture is the best; that the bark-bed is of great importance as a steady source of heat, less fire being necessary when it is used, and consequently the temperature of the house being less liable to fluctuate. Plunging the pots, in order to maintain a steady temperature at the roots, I consider also of the utmost importance, *particularly when the plants are in fruit*; and where tanners' bark or leaves cannot be obtained for that purpose, I would plunge them in earth, saw-dust, or any such material, which will, of course, soon assume nearly the mean temperature of the house.

Being actuated neither by feelings of prejudice nor motives of interest, I have thus stated my opinion candidly, and have but little fear of being told by practical men that it is erroneous. If, however, I am wrong, I shall, upon conviction of my error, most willingly give the preference to whatever mode of pine culture shall be fairly proved (all circumstances considered) most worthy of it. Having trespassed too far on your pages, permit me only to add, that my remarks, in returning from Downton, would

probably have been of a less speculative character, had I been aware my friend was "*taking notes*." I am, Sir, &c. — *Andrew Begbie. Yatton Court, Leominster, Dec. 18. 1822.*

Mr. Knight's Pines — It would be satisfactory to some of your readers, if Mr. Pearson (Vol. V. p. 717.) would state by what *means* he ascertained the weight of Mr. Knight's Mountserratt pines. Was it by "rule of guess?" I ask the question, because nothing can be more fallacious than this way of ascertaining the weight of pine-apples. Had Mr. Pearson seen some of the "black kinds" which I saw the other day, not many miles from this, he would not "think" that Mr. Knight might "challenge any pine-grower in the kingdom," unless he can produce fruit of greater weight even than he has stated. — *E. N. of Stafford. Dec. 10. 1829.*

The Anson or Otaheite Pine. — Sir, A constant reader, who has the care of a few sorts of pines, wishes to know what name Mr. M'Murtrie intends giving a pine which is known by the name of Anson's, and by some Anson's Queen. I see, in the last Number of the Gardener's Magazine (Vol. V. p. 608.), that Mr. M'Murtrie means to call the Otaheite pine Anson's for the future. Now, I think, before that Mr. M'Murtrie should have assumed an authority to change any of the names of pines, he ought to have made himself well acquainted with all the actual varieties now in cultivation in England; or, at least, he should have been certain that the name he has now given the Otaheite pine had never been given to any other pine before. Mr. M'Murtrie, or any other person who knows more than twenty sorts of pines, must acknowledge that the multiplication of the names of pines is too great already: therefore, to prevent any more confusion, I think the best way would be to let the Otaheite pine still go by its old and well known name. I can give no information respecting the origin of the Otaheite pine, but I think it is as likely to have been imported from some of the West Indian islands, as raised from seed at *Shugborough*. What ever could have induced them to call a pine, raised from seed in England, after an island of the South Seas? I shall be much obliged to Mr. M'Murtrie, or to any other person who can inform me where the Anson's pine (which I allude to) was first discovered. It is a very distinct variety, and differs widely from the Otaheite, both in the fruit and general habit of the plant. Was it not the pine which is known by the name of Allen's Seedling that met the eye of Mr. Dermott? It is a fine strong-growing sort, somewhat resembling the Otaheite in colour and erect position of its leaves, but their fruit is very different. — *A Constant Reader. Nov. 7. 1829.*

The Anson or Otaheite Pine. — Sir, I beg leave to send you a few remarks upon Mr. M'Murtrie's letter (Vol. V. p. 607.), which contains some reflections upon me and the statement I sent you of the introduction of the Otaheite pine. In the first place, Mr. M'Murtrie calls my letter an ingenious one, calculated to mislead the public, &c., and insinuates something about caprice and falsehood. Now, Sir, I affirm that what I wrote concerning the Otaheite pine is *substantially true*; and, if any one doubts it, let him go or write to Mr. Hodson, and he will confirm it. Mr. M'Murtrie then gives an account of the origin of the Anson pine, confirmed by Mr. Dermott, which may be all very true for any thing I know; but it does not at all invalidate my account of the Otaheite pine; and if I confounded the names of the two pines, it appears, from Mr. M'Murtrie's own statement, that the confusion first took place at *Shugborough*.

He then goes on to say that Mr. Hodson expressed himself indignant, &c. I believe Mr. Hodson was surprised; but his indignation would not have been so great, if Mr. M'Murtrie had shown him the whole of the correspondence, instead of telling him that I had grossly insulted him (Mr. M'Murtrie) in the Gardener's Magazine. With respect to Mr. Hodson's saying that the Otaheite suckers did not fruit from 1797 to 1810, I beg leave to inform Mr. M'Murtrie that his memory must have been treache-

rous; for Mr. Hodson *never told him any such thing*, but merely said he had more business on hand at Colton than he could well manage, and took no particular notice of the Otaheite pine; indeed, it is not very probable that any man would keep a pine plant thirteen years without fruiting it. I am, Sir, &c. — C. F. Webster. Drayton, Dec. 24. 1829.

ART. V. *Horticultural Society and Garden.*

SEPTEMBER 15. 1829. — *Read.* On the Destruction of Snails; by Mr. James Corbett.

Exhibited. *Symphytum asperum*, food for cattle, from Mr. D. Grant of Lewisham. [Mr. Grant sells the plants at 1l. per 100; we would strongly recommend a trial; possibly the *Symphytum* may become a valuable cottage forage plant.] Drawing of a species of *Dryandra*, exhibited by the Comte de Vandes, drawn by Madame Robin. Wheatear Carnations, Kirke's Seedling Plum, and twenty-two sorts of Apples, from Mr. Joseph Kirke, F.H.S. Seedling Georginas, from Mr. William Wells, F.H.S. Seedling Georgina, from Mr. Sutton, nurseryman, Andover. This was a double purple tinged with violet, and was one of the best of the season. Cockscomb, from Samuel Paynter, Esq., F.H.S., a particularly handsome specimen. Twelve sorts of various Flowers, from Robert Barclay, Esq. F.H.S. Brunswick Figs, two Queen Pine-apples, two Seedling Peaches, and a Nectarine, unnamed, from Mr. William Greenshields, F.H.S. Nutmeg in spirits, from William Henry Merle, Esq. F.H.S. Black Hamburg Grapes, from Mr. Henry Bailey, F.H.S., gardener to the Earl of Jersey. Otaheite Pine, from Mr. Patrick Flanagan, F.H.S., gardener to the Right Hon. Robert Peel. Cooper's large Plum, Williams's Bon Chrétien Pear, and eight sorts of Apples, from Mr. Thomas Gibbs, F.H.S. Specimens of a Seedling Apple, from the Rev. Mr. Dewhirst of Bury St. Edmunds. Seedling Apple, from Mr. John Burton of Oxford. Three sorts of Apples, from Mr. John George Fuller, F.H.S. Four sorts of Pears, from the Rev. Furney Belfield.

Also, from the Garden of the Society. Flowers of *Eccremocarpus scaber*, *Coreopsis Atkinsoniana*, *Gaillardia aristata*, *Donia villosa*; Double, Dwarf, and Anemone-flowered Georginas; *Argemone grandiflora*, *Stevia serrata*, *Trachymene cærulea*; *Verbena Melindres*, *Aublétia*, and *pulchella*; *Eschscholtzia californica*; *Oenothera vininea*, *pallida*, *odorata*, and *Lindleyana*; *Clarkia pulchella*, *Agératum mexicanum*, *Heliánthus lenticularis*, Mule and China Pinks, China-asters, *Ipomopsis elegans*, *Centaurea americana*, *Lupinus plumosus*, *ornatus*, and *polyphyllus*; *Chrysanthemum monspessulanum*, *Malope malacoides*, and French Marigolds. — Fruits: Green-fleshed Melon, eleven sorts of Apples, thirteen sorts of Pears, five sorts of Peaches, and five sorts of Nectarines, also Five sorts of Leaf Beet.

October 6. — *Read.* Upon the method of setting the flowers of the Cactus; by Mr. Henry Groom, F.H.S. An account of a Gansell's Bergamot Pear Tree; by the Rev. John Calthorp. On the cultivation of the Camellia, by Thomas Carey Palmer, Esq. F.H.S.

Exhibited. A collection of remarkably fine seedling Georginas, from Mr. James Veitch, F.H.S. Eight sorts of Flowers, from Robert Barclay, Esq. F.H.S. Specimens of a Seedling Grape, and seven sorts of Apples, from John Williams, Esq. C.M.H.S. Specimens of Gansell's Bergamot Pear, from the Rev. John Calthorp. Five sorts of Pears, and five sorts of Apples, from Mr. Peter Langelier, C.M.H.S., of Jersey. Seedling Cider Apple, from W. R. Churchill, Esq. Godfrey's Defiance Apple, from John Moxon, Esq. Five sorts of Apples, from John George Fuller, Esq. Sixty-one sorts of Apples, from Mr. Hugh Ronalds, F.H.S.

Also, from the Garden of the Society. Thirty-seven sorts of Apples, twelve sorts of Pears, twenty-two sorts of Capsicums, eleven sorts of Endives, *Vaccinium padifolium*, from Madeira and Caucasus.

October 20. — Read. On the cultivation of the Alpine Strawberry; by Mr. William Hughes, gardener to Charles Baring Wall, Esq. F.H.S.

Exhibited. A Stick made from a branch of the Cow Tree of the Caraccas, together with a piece of the bark, a phial of the milk, and a drawing of the tree, exhibited by Mr. Fanning. [This drawing was lent us, but it was too inaccurate to be worth engraving.] Alpine Strawberries, from Mr. William Hughes; these were sent to illustrate the paper read this day. New Seedling Georginas, grown in the garden of the Hon. Society of Lincoln's Inn, from Mr. John Maher, F.H.S. Two sorts of Grapes, from Edmund Tattersall, Esq. F.H.S. Two sorts of Grapes, from Mr. Henry Bailey, gardener to the Earl of Jersey, F.H.S. Seedling Grape from the Zante Currant Grape, from Mr. Robert Buck, F.H.S. Four sorts of pears, and 103 sorts of Apples, from Mr. John Haythorn, F.H.S. A Seedling Apple, from J. P. Powell, Esq., of Quex Park, Kent. Three sorts of Seedling Apples, and Tythorp Pippin, from P. T. Wykeham, Esq., of Tythorp House, Thame, Oxon.

Also, from the Garden of the Society. Flowers: *Lupinus polyphyllus* and *lépidus*, *Gaillardia aristata*, *Coreópsis aúrea*, *Clárkia pulchélla*; *Verbena pulchélla*, *Melindres*, and *Aublétia*; *Ænothéra Lindleyana* and *vimínea*; *Eschschóltzia califórnica*, *Málope malacóides*, *Collinsia grandiflora*, *Tagètes lúcida*, Poppy Anemones, *Chrysánthemum monspessulanum*, and *Gília capitata*. — Fruit: Nineteen sorts of Pears, and Thirty-six sorts of Apples, Orange and Sugar-loaf Pine-apples.

November 3. — Read. On the Degeneracy of the larger and finer Varieties of Persian Melons in the climate of England; by Thomas Andrew Knight, Esq. F.R.S. and President.

Exhibited. Sixteen sorts of Apples, and six sorts of Pears, from Mr. Peter Langelier, C.M.H.S., of Jersey; these were very fine interesting specimens. Three sorts of Apples, from Sir George Steuart Mackenzie, Bart. F.H.S. Sixty-one sorts of Apples, from Mr. Hugh Ronalds, F.H.S. Three sorts of Apples, from Mr. Marshall of Southborough Lodge, Kingston, Surrey. Eight sorts of Apples, from Charles Worthington, Esq. F.H.S.

Also, from the Garden of the Society. Flowers: *Ænothéra Lindleyana* and *vimínea*, *Tagètes lúcida*, Poppy Anemones; *Lupinus polyphyllus*, blue, and white, *L. lépidus*; *Gaillardia aristata*, *Collinsia grandiflora*, *Clárkia pulchélla*, and *Gília capitata*. — Fruit: Thirty-nine sorts of Apples, Enville Pine-apple, thirty sorts of Pears, seventeen sorts of Turnips, four sorts of Cabbages, Portugal Quince, Chinese Plum, and *Pýrus sinénsis* (Sandy Pear).

November 17. 1829. — Read. On the cultivation of the Vine upon the Open Wall at Croxdale; by William Thomas Salvin, Esq. F.H.S. On the propagation of Orchideous Plants; by Mr. William Perrin.

Exhibited. Nepal Berberries, and Jam made from the same, from William Wells, Esq. F.H.S. Tripe de Roche, from James Webster, Esq. F.H.S. This is the lichen upon which the travellers and hunters in the arctic regions of America are frequently obliged to subsist. Six sorts of Seedling Apples, from John Crump, Esq. Twenty-seven sorts of Apples, from Mr. John Maker, jun., gardener to Lady East, at Tifield, Berkshire. Two sorts of Pears, from John George Fuller, Esq. F.H.S.

Also, from the Garden of the Society. Flowers: Eleven sorts of Chrysanthemums. — Fruit: Thirty-six sorts of Apples, and eighteen sorts of Pears. — Vegetables: Eight sorts of Radishes, Chinese Cabbage, three sorts of Kohl Rabi, and Oxnoble Potatoes, forced in boxes.

December 1. — Exhibited. Forty-five sorts of Apples, from Mr. Hugh Ronalds, F.H.S. Specimens of a Seedling Apple, from Lieut.-Gen. Marriott. Root of *Rhèum Emòdi*, from Aylmer Bourke Lambert, Esq. F.H.S.; a fine root, exhibited as a specimen of true Rhubarb. A Melon from Cephalonia, from — Green, Esq.; it was a fine specimen.

Also, from the Garden of the Society. Flowers: Eighteen sorts of Chrysanthemums. — Fruit: Nineteen sorts of Pears, thirty-four sorts of Apples, Elford, and new Demerara Pine-apples, and *Psidium Cattleianum*. — Vegetables: Seventeen different varieties of Cabbages, and Mushrooms.

The Affairs of the Society. — A rumour having reached us of a letter having been printed on this subject, addressed to Mr. Sabine, we wrote to the gentleman said to be the author of the letter, and the following is his answer. The substance of the answer has also appeared in this day's (Jan. 15.) *Times*: —

Sir, In answer to your letter, I beg to inform you that I have not published any letter to Mr. Sabine. I printed, for private circulation, an answer to two minutes which were sent to me by the Council of the Horticultural Society: I do not know whether you will find it worth while to insert this answer in your Magazine.* I find, since, that there was a party in the Council (at the head of which, I am told, was Mr. Sabine) to recommend the General Meeting to expel me. This, however, failed, and two minutes were sent instead. Since the statement I send you was printed, I have discovered, in the archives of the Society, a written report, by a servant of the Society (Mr. Douglas), of a conversation with me, which report is *utterly false*; and on this report the abuse in the minutes of the Council was partly founded, although the report was never shown to me. I cannot *prove* that he was employed as a spy; but I can only say, that he came, after his report had been made, twice to my house; and at one time represented Mr. Sabine as no better than he should have been, in having taken some birds of him (Douglas). I did not, however, move in the matter beyond writing to the Society to ask as to the fact; but I will not trouble you with my own affairs. I have made a discovery which, I think, will so completely implicate all the present members of the Council, and the officers, that I think their reign must be nearly at an end. The Society owes from NINETEEN TO TWENTY THOUSAND POUNDS!!! This was admitted by Mr. Lindley to me. It owed nearly 19,000*l.* last year! and this year the debt is considerably increased; and, in addition, many members have withdrawn, and many, I know, are about to withdraw. As to the tradesmen's bills, some are unpaid for 1826, and, I believe, earlier. The *auditors* have no balance-sheet when they audit, so that they never know the real state of affairs of the Society; nor has there been a balance-sheet laid before the Society at the General Meeting for *these two years*! nor can I find that the Council are bound to take or give any account of the debts. The debts consist of tradesmen's bills and loan debts (about 11,000*l.*). The tradesmen having become clamorous, they had *bonds* given to them: Nicol, the printer, has bonds for more than 1800*l.*, bearing *interest*; so has a builder, for some thousands, I believe. All the property I can find the Society have is a small arrears due from the members, the value of some houses in Regent Street, and their stock at the garden. Mr. Frost and the Medico-Botanical are nothing to this! I am not much of a lawyer, but, I suppose, *somebody* is liable for this mass of debt; of which no one, that I can hear of, knew, until I heard, when a poor man was arrested, and he gave as a reason that he could not pay because the Society would not pay him a heavy bill which had been long due to him; and this gave me the clue. But, in addition to this, there may be claims outstanding of which I know nothing, and which have never been brought into account. One there is, I know, which has been omitted; it is as follows: — Mr. Atkinson, one of the earliest patrons of the Society, conducted all the architectural business of the Society gratis, but stipulated to be paid his expenses actually out of pocket. Mr. Atkinson also, when the Society was in great distress, procured a gentleman to lend 1000*l.* to the Society. The Society, long after the time arrived for repayment, *refused to pay*; and Mr. Atkinson was obliged to take legal proceedings, and to threaten them, to get the money back. He never made any charge against the Society beyond the expenses of his clerks in making drawings, &c. He estimates his services to the Society, charging after the rate which he charges in other cases, at between 300 and 400*l.* All this he forewent; but he wrote some letters about the 1000*l.*, and also sent in his bill, with a request that it might be laid before the Council. Mr. Atkinson never got any answer. I heard of it, insisted on seeing the letters: I found the letters and bills had been *mislaid by accident*; and Mr. Lindley admitted he believed they were *never laid before the Council*. Whilst prosecuting this curious enquiry, I found that part of the letters of the Society were kept at *Mr. Sabine's private house*. Now, this is a thing which never ought to be permitted; and I wonder at the supineness of the President (for you must not mix him up with the Council) in permitting this. I should add, that it is impossible to find out what is done at the Society, as the Council will not let any member see their *minutes*, as is done in other Societies, nor can you see the minutes of the committees. No wonder, therefore, the members get up some fine frosty morning, and find themselves hard in debt 20,000*l.*, and nothing to pay it with. The profusion is inconceivable: Nicol, the printer, who cannot get paid, takes a bond, and, I believe, makes the Society pay pretty dearly for credit. I am, however, going to check his account against one by another printer for the same sort of work. Would you believe that the stupid, trumpery, childish, absurd plate of the crocuses, in the last part of the *Transactions*, cost the Society about 220*l.*? I took the trouble to make the calculation. I have not time at present to send you more: if any thing occurs before you go to press, I will send it to you. The fact is, I have got scent of many other things, and I am not yet in possession of all the materials; and, besides, there is much to do at the Zoological. I propose looking at the *bills* in that Society: it is said there is more profusion there than at the Horticultural; I hope that *they* will keep out of debt. Mr. Sabine is the treasurer. I remain, Sir, yours, &c. — B. Jan. 14. 1830.

P. S. Can you tell how much Turner stole of the Society; and do you know any of the mysterious facts as to allowing him to escape? I wish you could learn them for me. — B.

At the Meeting, on January 19., it was admitted that the Society was in debt upwards of 19,000*l.*, and a proposition was made, and afterwards advertised in the newspapers, "for the appointment of a committee to enquire into the general expenditure and management of the Society at the next General Meeting."

* We shall give the essence in next Number. — Cond.

ART. VI. *London Nurseries.*

EPSOM Nursery. — New or rare plants which have flowered during the months of September and October, 1829 : —

DICOTYLEDONEÆ.

Subclassis I. THALAMIFLOREÆ.

Nat. Ord. Ranunculaceæ.

Trib. 2. *Anemoneæ.* *Anemone* (*Dec.*) *multífida* *Dec.*

Trib. 4. *Helleboreæ.* *Aconitum* (*Tourn.*) *pálidum* *Nutt.*

Papaveraceæ.

Argemone (*Tourn.*) *grandiflora* *Sweet.* B. F. G. t. 226. This fine plant is not noticed on account of its novelty, but for the purpose of correcting an error of botanical writers, in considering it an annual. No plant is more decidedly perennial; for plants are now growing in this nursery, raised from the imported seeds in 1827, which are also much stronger, and the flowers are considerably larger than those of one year's growth. It requires the protection of a frame or green-house. The name was first given, and the species correctly defined, by Mr. Sweet in his *Flower-Garden*, which seems to have escaped the observation of the writer of the *Bot. Reg.* t. 1265., who has adopted the name as of garden origin. — *A. Barclayana* Penny in Hort. Eps. ed. 2. ined. Another perennial species! of great beauty (from the inexhaustible store of rare plants belonging to R. Barclay, Esq.), with spotted stems and sulphur-coloured flowers. It possesses abundant specific difference from the other recorded species. The treatment advised for *A. grandiflora* is applicable to this species also.

Droseraceæ.

? *Parnassia* (*Tourn.*) *asarifolia* *Vent.* This pretty plant has not, I believe, found a place in any of the botanical periodicals, although the most interesting species in cultivation. The radical leaves are reniform, cauline leaves cordately orbicular; flowers large, white, marked with green lines, branched at their apex: thrives in a moist, shady, peat border, or in small pots of turfy peat placed in a pan of water. In your *Encyclopædia of Plants*, this genus is inadvertently referred to *Hypericineæ*. Mr. Lindley has more recently referred it to *Saxifrageæ*. *Synopsis Brit. Flora*, p. 68.

Geraniaceæ. Trib. 3. *Pelargoniææ.*

Pelargonium (*L. Herit.*) *peráplum* *Sweet.* Ger. t. 61. (Stent's Leopold of the gardens about London). — *P. Cameronianum* Penny in Hort. Eps. part 2. ined. This beautiful hybrid plant is intended to commemorate a most excellent practical botanist, and one of the best of cultivators. It was, I apprehend, raised by Mr. Young of Taunton, and is recognised in the gardens about London under the name of *P. quercifolium coccineum*. — *P. nutans* *Sweet.* Ger. 2d s. t. 66. (Smith's Nonpareil of the gardens about London). — *P. succulentum* *Sweet.* Ger. 2d s. t. 69.

Oxalideæ.

Oxalis (*Lin.*) *carnosa* *Molina.* Bot. Reg. 1063. A pretty species, with "singularly fleshy" leaves and yellow flowers. If planted in the open border, early in summer, it acquires a considerable stem, and its lively flowers are produced in great abundance until November: frame or covering in winter. It possesses a most agreeable acidity, far greater than has been observed in other species of the genus.

Rutaceæ. Trib. 1. *Diósmeæ.*

Ruta (*Tourn.*) *albiflora* *Hooker.* Ex. Fl. t. 79. *R. Dampatis* *Hamil.* MSS. This is certainly a *Ruta* in habit and odour, but evidently departs from that genus in several particulars. Suffruticose; stem erect, 1-2 ft. in height, the extremity paniculately branched; leaves bipinnate, leaflets obovate retuse; flowers white! tetrapetalous, 8-stamened; ovary on a very long

pedicle, 4-lobed. It has been considered an herbaceous perennial, but it is truly suffruticose. It is generally treated as a green-house plant. If planted on a warm border, it forms an elegant bush; but will require to be well protected, as several plants perished in that situation the preceding winter.

Subclassis 2. CALYCIFLO'RÆ.

Leguminosæ.

Subordo 1. *Papilionaceæ.* Trib. 3. *Hedysæreæ.* Subtrib. 1. *Coronilleæ.*

Hippocrèpis (L.) prostrata Penny. Hort. Eps. p. 1. p. 26. No. 1798. An undescribed species, introduced, I believe, in 1825, from Switzerland. It is probably *H. comosa* of the Swiss botanists, but is, undoubtedly, very distinct from that species. The flowers are of a fine yellow, nearly double the size of *H. comosa*, and appear in the greatest profusion in May and June, but more sparingly in the subsequent part of the season. A lovely rock-plant, propagated by cuttings.

Trib. 5. *Phaseoleæ.*

Canavalia (Dec.) ? bonariensis Lindl. Bot. Reg. 1199.

Lupinus (Tourn.) pulchellus Penny in Hort. Eps. part 2. ined. This is a suffrutescent species, of considerable beauty, from Mexico. I shall probably offer a few remarks upon it in a future Number. — *L. polyphyllus* Lindl. & pallidus Penny. — *L. lepidus* Doug. B. R. 1149. A very fragrant as well as elegant species.

Subordo 4. *Cæsalpîneæ.* Trib. 10. *Cassiææ.*

Cassia (L.) Barclayana Sweet. Fl. aust. t. 32.

Rosææ. Trib. 5. *Dryadeæ.*

Sieversia (Willd.) triflora Spreng.

Onagrariæ. Trib. 2. *Fuchsiææ.*

Fuchsia (Plum.) thymifolia H. B. et Kunth. Sweet. B. F. G. new s. t. 25. Like the other species of this admired genus, it should be planted in a bed exclusively devoted to them; and, if situated according to their affinities, will facilitate the enquiries of the scientific botanist, and be highly ornamental. The abundance of flowers (though inferior in size to the other species), and their mutability, succeeded by globose purplish-black berries, render this a very pleasing object. The absence of botanical erudition appears in designating this species *thymifolia*, which is absolutely inapplicable, especially to a plant which might evidently have had a name more expressive.

Melastomææ. Subordo 1. *Melastomeæ.* Trib. 2. *Rhexiææ.*

Rhexia (R. Br.) ciliosa Mich. Sweet. B. F. G. t. 298. Exceedingly rare.

Paronychiææ. Trib. 2. *Illecèbreæ.*

Paronychia (Juss.) bonariensis Dec. Curious; proper for rockwork.

Saxifrageæ.

Astilbe (Hamil.) decandra D. Don. This singular plant is of rare occurrence, and is only adapted for the gardens of the curious. It is the *Tiarèlla biternata* Vent.

Rubiæææ. Sect. 5. *Hedyotideæ.*

Hedyotis (L.) campanuliflora Hook. Bot. Mag. t. 2840.

Sect. 9. *Galeææ.*

Asperula (L.) longiflora Kit.

Compósitææ. Subordo 1. *Cichoræææ.*

Prenanthes (L.) racemosa Mich.

Subordo 3. *Carduæææ.* Div. 3. *Vernoniæææ.*

Aster canus (Kit.), radula Ait., gravæolens Nutt.

Grindelia (Willd.) nitida, coronopifolia.

Subordo 4. *Eupatoriææ.*

Stevia (Cav.) incanescens Lag.

Subordo 5. *Jacobææ*.

Senecio (L.) *lilacinus* Schrad.

Subordo 6. *Helianthææ*.

Encelia (Adans.) *canescens* Cav. Bot. Reg. 909.

Rudbeckia (L.) *columnaris* Pursh. Bot. Mag. 1601.

Coreopsis (L.) ? *aurea* Ait. Bot. Reg. 1228.

Subordo 8. *Anthemideæ*.

Pyræthrum (Sm.) *uliginosum* Kit.

Lobeliææ.

Lobelia (L.) *maculata* Penny. Hort. Eps. ed. 2. ined.

Seeds of this interesting species of *Lobelia* were transmitted by Philip Barker Webb, Esq., to his gardener, Mr. Wm. Young, at Milford House. It is, I believe, a new species (as Mr. Webb suspected), as I am unable to cite a description to which it is referable. It is a neat little plant, with numerous spotted stems rooting in every direction; leaves roundish, toothed; peduncles axillary, solitary, twice the length of the leaves; flowers white. Native of New Zealand; protection of a frame.

Escalloneæ.

Escallonia (Mut.) *bifida* Link et Ott.

Asclepiadææ.

Asclepias (L.) *verticillata* L. Sweet. B. F. G. t. 144.

Polemoniææ.

Phlox (L.) *pyramidalis* Sm., *elata* Penny in Hort. Eps. ed. 2. ined.

The present plant is distinguished from *P. pyramidalis* by its taller and more robust habit; the flowers are also twice the size, of a lilac colour. No other differences having been observed, it has been deemed advisable to consider it a variety of the above established species. It is next in beauty to *P. reflexa* Sweet. — *P. tardiflora* Penny in Hort. Eps. part 1. p. 38. No. 2725. Plants of this species were imported from North America, in 1825, by Messrs. Young, under the name of *P. suavæolens tardiflora*. It was first ranked as a distinct species in the above-cited work, and subsequent experience appears to justify such a procedure. The stem is erect, 2 to 3 ft. in height, smooth or upper part slightly pubescent, minutely spotted; leaves various, lower lanceolate, upper cordate acuminate, shining on the upper surface, pallid underneath; flowers white, fragrant, tube very long, segments cuneate, rounded, imbricate. A very elegant plant, succeeding best in peat soil; frame. It received the expressive name of *tardiflora*, in reference to the time of flowering, and the near affinity it has to *P. suavæolens*; *P. longiflora*, as has been suggested, may to some appear preferable; I have, however, preferred its prænomen. — *P. procumbens* Lehm. Alpha in Gard. Mag. v. 5. p. 471. This species has again flowered: instead of a few-flowered panicle, it has produced a large corymbose panicle, extremely elegant.

Boraginææ.

Echium (L.) *aspernum* Lam. A biennial species, with rose-coloured flowers.

Scrophularinææ.

Digitalis (L.) *laciniata* Lindl. Alpha in Gard. Mag. vol. 5. p. 471. I have already given some remarks upon this charming plant: it only remains for me to add, that it has continued to flower until the first week in December. The suffrutescent habit, to which I have also adverted is characteristic of the species all along the chain of mountains from Caratræa, near Malaga, to the mountains of Ronda, near Gibraltar, though not in very great abundance. The figure in Bot. Reg. t. 1201. conveys no correct idea of the beauty of the plant.

Pentstemon (*Willd.*) *barbatus* (*Penny*) β *majus*. This fine variety was produced among a number of seedlings in 1827. It is a stronger grower, the flowers are considerably larger, and of a finer colour. — *P. glaucum* *Lindl. Bot. Reg. t. 1286.*

Gratiola (*L.*) *aurea* *Muhl. Lod. Bot. Cab. t. 1399.* This charming little plant appears peculiar to peat soil.

Labiatae.

Cunila (*L.*) *mariana* *L. Sweet. B. F. G. t. 243.*

Salvia (*L.*) *nubicola* *Wallich. Sweet. B. F. G. t. 140., amarissima Ort. Bot. Reg. t. 347.* This species forms a fine bush, entirely covered with racemes of beautiful blue flowers from June to October.

Myoporineae.

Stenochilus (*R. Br.*) *viscosus* *Graham. B. M. 2930.*

Acanthaceae.

Justicia (*L.*) *speciosa* *Wallich.*

Plumbagineae.

Taxanthema (*Neck et R. Br.*) *echioides.*

Proteaceae.

Grevillea (*R. Br.*) *concinna* *R. Br. Sweet Fl. austr. t. 7.*

This exceedingly rare plant is limited, at present, to a few collections; it is now, however, perfecting seeds. It may, therefore, be anticipated shortly to become more plentiful. It is a most desirable conservatory plant, producing its fine red flowers nearly the whole year. Cuttings are rooted with great difficulty.

MONOCOTYLEDONEÆ. Subclassis I. PHANEROGAMÆÆ.

Iridaceae.

Sisyrinchium (*L.*) *coelestis* *Penny in Hort. Eps. ed. 2. ined.*

Cypella *Herberti Bot. Reg. 909.*

Hypoxidaceae.

Hypoxis (*L.*) *gracilis* *Lehm.*

Amaryllidaceae.

Alstroemeria (*L.*) *psittacina* *Lehm. Alpha in Gard. Mag. p. 615.* This magnificent plant has continued to flower until the end of November.

Commelineae.

Tradescantia (*L.*) *crassula* *Link. Bot. Mag. 2935.* This most singular species of *Tradescantia* was received from Berlin in the spring of 1827, by Robert Barclay, Esq., of Bury Hill (by whom it was presented to Messrs. Young), in whose collection it must have been prior to its introduction to the Edinburgh botanic garden. It is seen in the highest state of perfection in the open border, in the summer months, where it evades the severity of our climate, if protected by a mat in severe weather; if kept in the stove or greenhouse, it is in flower the greater part of the year. *T. congesta* *D. Don. Penny in Hort. Eps.* By far the most beautiful of the hardy kinds, attaining the height of 2 to 3 ft., producing crowded umbels of flowers of a vivid blue colour. It succeeds in any kind of soil, but prefers peat. It has the closest affinity to *T. virginica*, but is specifically different.

Filices.

Bléchnum (*L.*) *brasiliense* *Desv. A magnificent stove species.*

Woodsia (*R. Br.*) *Perriniana* *Torrey. An extremely rare British species.*

I learn from Messrs. Young, that they are desirous to obtain the correspondence (either by exchange or otherwise) of the directors of all the botanic gardens throughout the world. — *Alpha. Jan. 1. 1830.*

Exotic Nursery, King's Road. — Mr. Knight has recently completed an orangery, and heated it by hot water, on a plan combining Comte Chabannes's idea of having the fire in the centre of the boiler, and Mr. Weeks's plan of circulating the water in a thin stratum. We have prepared an account of it; but the engravings not being done, it must be deferred till next Number. We never enter Mr. Knight's hot-houses without feeling surprised that camellias thrive so well in the dark. They seem, in this respect, to resemble the box and the holly; and, if so, they would form excellent underwood for ornamental plantations in the south of England; probably even in the mid-land districts. The splendid conservatory here, the iron sash-bar roof of which was put up by Mr. Bramah, never looked better. Mr. Knight's hot-houses and working-sheds afford valuable lessons to the young gardener, in arrangement, orderly management, and continual neatness; the last a matter of some difficulty with a nurseryman in full business. — *Cond.*

ART. VII. *Covent Garden Market.*

<i>The Cabbage Tribe.</i>		From	To			From	To
		£ s. d.	£ s. d.			£ s. d.	£ s. d.
Cabbages, per dozen				Purelain, per punnet		0 0 9	0 1 0
Red		0 4 0	0 6 0	Thyme, per dozen bunches		0 0 0	0 6 0
Plants, or Coleworts		0 2 6	0 6 0	Sage, per dozen bunches		0 2 0	0 2 6
Savoy, per dozen		0 0 6	0 1 6	Mint, forced, p. doz. bunch.		0 0 0	0 1 3
German Greens or Kale,				Peppermint, dry, per dozen			
per dozen		0 0 9	0 1 0	bunches		0 0 0	0 1 0
Broccoli, per bunch				Marjoram, dry, per doz. bun.		0 0 0	0 1 0
White		0 1 6	0 4 0	Basil, dry, per doz. bunches		0 0 0	0 2 0
Purple		0 1 6	0 3 6	Rosemary, dry, p. doz. bun.		0 0 0	0 6 0
Cap		0 1 6	0 3 0	Lavender, dry, per doz. bun.		0 0 0	0 3 0
<i>Tubers and Roots.</i>				Tansy, dry, per doz. bunches		0 0 0	0 1 0
Potatoes	per ton	3 10 0	5 0 0	<i>Stalks and Fruits for Tarts,</i>			
	per cwt.	0 4 0	0 6 0	<i>Pickling, &c.</i>			
	per bush	0 2 0	0 3 0	Gourds, per dozen		0 2 0	0 4 0
Kidney, per bushel		0 2 6	0 3 0	Tomatoes, per sieve		0 2 0	0 5 0
Scotch, per bushel		0 2 0	0 2 6	Capacuma, per hundred		0 4 0	0 10 0
Jerusalem Artichokes, per				<i>Edible Fungi and Fud.</i>			
half sieve		0 1 6	0 2 6	Mushrooms, per pottle		0 1 3	0 1 6
Turnips, White, per bunch		0 0 1	0 0 6	Morels, dry, per lb.		0 0 0	0 16 0
Carrots, old, per bunch		0 0 3	0 0 6	Truffles, per pound			
Parneps, per dozen		0 0 9	0 1 3	English		0 3 6	0 5 0
Red Beet, per dozen		0 1 0	0 1 6	Foreign, dry		0 0 0	0 16 0
Skirtet, per bunch		0 1 0	0 1 6	<i>Fruits.</i>			
Scorzonera, per bunch		0 2 0	0 3 0	Apples, Dessert, per bushel			
Salafy, per bunch		0 1 0	0 1 6	Nonpareils		0 4 6	0 9 0
Horseradish, per bundle		0 1 0	0 5 0	Golden Pippins		0 6 0	0 12 0
<i>The Spinach Tribe.</i>				Bleuheim Oranges		0 4 6	0 7 0
Spinach	per sieve	0 1 6	0 2 6	Pearmaine		0 4 6	0 7 0
	per half sieve	0 1 0	0 1 6	Apples, Baking, per bushel			
Sorted, per half sieve		0 1 0	0 5 0	Baking		0 3 0	0 4 6
<i>The Onion Tribe.</i>				American		0 15 0	1 5 0
Onions, old, per bushel		0 4 6	0 5 0	From Jersey		0 2 6	0 3 6
Leeks, per dozen bunches		0 0 9	0 1 6	Royals		0 4 6	0 6 0
Garlic, per pound		0 0 0	0 1 0	Quinces, per half sieve		0 1 6	0 2 0
Shallots, per pound		0 1 6	0 2 6	Medlars, per half sieve		0 2 6	0 3 6
<i>Asparaginous Plants,</i>				Almonds, per peck		0 0 0	0 7 0
<i>Salads, &c.</i>				Elderberries, per bushel		0 0 0	0 8 0
Sm. kale, per punnet		0 2 0	0 3 6	Cranberries, per gallon		0 2 6	0 3 0
Cardoons, per bunch (three)		0 1 6	0 2 6	Chestnuts, French, per peck		0 2 6	0 10 0
Lettuce, Cabbage, per score		0 0 6	0 1 0	Filberts, English, per 100 lbs.		2 5 0	3 0 0
Endive, per score		0 1 0	0 2 0	Nuts, Spanish, per peck		0 3 0	0 3 6
Succory, per bunch		0 0 0	0 0 6	Pine-apples, per pound		0 5 0	0 10 0
Celery, per bundle (12 to 15)		0 0 9	0 2 6	Grapes, per pound			
Small Salads	per ½ sieve	0 2 0	0 3 0	Hot-house		0 4 0	0 6 0
	per punnet	0 0 2	0 0 3	Portugal		0 1 0	0 1 6
Watercress, per dozen small				Oranges, per dozen		0 0 6	0 2 0
bunches		0 0 4	0 0 6	per hundred		0 3 0	0 14 0
<i>Pot and Sweet Herbs.</i>				Bitter Oranges, per hundred		0 0 0	0 10 0
Parsley, per half sieve		0 2 6	0 6 0	Lemons	per dozen	0 0 9	0 2 0
Tarragon, per bunch		0 0 0	0 0 9	per hundred		0 4 0	0 12 0
				Sweet Almonds, per pound		0 2 9	0 3 0
				Brazil Nuts, per bushel		0 12 0	0 16 0

Observations. — The remarks in the last Number (Vol. V. p. 741.), respecting the probable result of the extreme wetness of the season, have been fully borne out. The supplies of coleworts, savoys, and other vegetables, have not been abundant; consequently, very fair prices have been obtained, which have been considerably advanced by the setting in of the severe frost during the last fortnight. The prices marked in the list may be considered not only as the extremes, but as indicating more particularly the change produced by the alteration in the weather; in which, should any sudden alteration take place, an equally rapid depression in prices might be expected. A very material difference now exists in the metropolitan markets respecting the purchase of very many articles from what obtained formerly. When such articles as broccolis, sea-kale, asparagus, coleworts, turnips, and other choice vegetables, from whatever cause it may arise, become scarce, the prices readily assume a maximum, which has the effect of throwing them out of immediate use, and very generally there is no further demand or even enquiry for them until the prices again assume a moderate rate. To speculate on the cause of such difference might be foreign from the nature of these observations, but I think it may be fairly attributed to the diminution of resources among the mass of society, and the appropriation by the richer classes of their incomes to other enjoyments than those of the table, and the hospitalities heretofore exercised by them.

The supplies of apples have been very abundant; but in consequence of the reduced prices, not so great as the crop would have indicated, the expense of carriage from the remote counties consuming, in some instances, the whole produce of the inferior sorts, the better varieties only bear a remunerating price, but so totally different from what has been sometimes obtained, that I cannot forbear stating an instance or two. Old Golden Pippins, which have brought 42s. per bushel, and even 84s., now produce 10s. or 12s., and not in demand at that price; fine Old Nonpareils, former prices 30s. to 50s. per bushel, now at 5s. and 10s., and could not be sold at all if held at a higher rate. Is this attributable to the change in the relative value of money, as it regards articles of more immediate necessity, or determined by the same cause as that I have intimated respecting vegetables?

Our potato market has not been so freely supplied as usual at this season, which may, in a measure, be accounted for from the circumstance, that the quantities necessary for the amazingly increased consumption of the metropolis has rendered it essential to look farther off for a supply, and, being a heavy article, it must be conveyed by water; consequently, a much larger quantity is obtained in that way than formerly, when only the Yorkshire Red-nosed Kidney used to reach our market by that channel. Now the trade on the Thames is so much increased in this article, that vessels from the remotest parts of Scotland are constantly to be found with ample supplies. From this I conclude that the delivery from the river is more immediate than through the medium of the public markets, as heretofore. Shallots and garlic have become very scarce and very dear; a small supply of the former has been procured from France, but with some difficulty; from which it would appear that the prevailing wet throughout the summer on the Continent, as well as in this country, has been unfavourable to their growth. Onions come to hand freely, but obtain fair prices. The growth of celery has been much deteriorated by the excessively wet season, which shows that superabundant moisture is not necessary to it in its cultivated state. Formerly nothing but the Italian white variety was esteemed in the London markets; now the solid-stemmed sorts are considered best; and those grown upon fresh soils are found to be of superior quality, and most in demand. The supply of turnips has been good, and the prices moderate until the late severe frost set in; since which the prices have advanced

considerably, and the quality being much injured by the weather, renders them unsaleable at any rate in quantities. All other articles are in less abundance than usual at this season, but no very sensible difference in value has been created by this circumstance. — *G. C. Jan. 2. 1830.*

Jan. 20. — Prices not materially different.

ART. VIII. *Provincial Horticultural Societies.*

ESSEX.

The Chelmsford and Essex Horticultural and Florists' Society. — The last Show for this season, of georginas, fruits, &c., was held on September 15. The exhibition of the georgina was the grand effort of the day, and the specimens were generally fine. The first prize for eight georginas was awarded to the Rev. W. Jesse, Vicar of Margaretting, for Veitch's Apollo, Veitch's Sultan, Veitch's Lady Acland, Veitch's Le Grand Seigneur, Veitch's Navarino, and Wells's Vesuvius. The second prize to Mr. Geo. Howard, for Phoenix, Aurantia Supérba, Wells's Superb Yellow, Fair Helen, Lateritia, Comet, Empress, and Madame Crommelina. The third prize to Mr. Sorrell, for Comet, Agathe Imperial, Eclipse, Variabilis, Black Prince, Superb Yellow, Belvidera, and one unknown. Mr. Hogg, Mr. Saltmarsh, and Mr. Ceely, each showed some good flowers. The seedlings shown by Mr. Copland and by Mr. Hogg were much admired. The fruit and vegetables were very fine, and consisted of peaches, nectarines, apples, celery, potatoes, and onions, particularly the peaches of W. Wicks, Esq., and the Quarrenden apple exhibited by Mr. Sorrell. The prizes for fruits and vegetables were awarded to Mr. Saltmarsh and Mr. Davis. Two fine pines were shown by Mr. Howard, from the garden of Lord Viscount Maynard. The Society is rapidly increasing. (*Chelmsford Chronicle*, Sept. 18.)

BUCKINGHAMSHIRE.

The Buckingham Horticultural Society. — The last Annual Meeting was held on August 4. The grand stand exhibited a fine display of carnations and picotees; and the stages were filled with beautiful specimens of exotic plants from the Duke of Buckingham's gardens at Stowe; and were also contributed to by several gentlemen of Buckingham, amongst which the cockscombs of Wm. Stowe, Esq., were particularly conspicuous. The dessert was furnished by Mr. Brown, gardener at Stowe; besides which, a great variety of fine specimens of large gooseberries, currants, apples, pears, cherries, &c., were furnished by different members of the Society. The prizes were awarded as follows: —

Flowers. Bizarra. Scarlet: 1. Wild's Standard of Perfection, and 2. Smalley's Foxhunter, Mr. Horwood, Bicester. Crimson: Gregory's Alfred, Mr. Horwood, Bicester. Purple: Pyke's Eminent, Mr. Horwood, Bicester. Flake. Scarlet: 1. Lord Anson, Mr. Horwood, Bicester; 2. Madam Mara, Mr. Elkington of Buckingham. Purple: Wood's Commander, Anonymous. Rose: 1. Duchess of Devonshire, and 2. Kenney's Excellent, Mr. Elkington of Buckingham; 3. Madam Vestris, Mr. Brown of Stowe. Picotees. Red: 1. Martin's Favourite, and 2. Huston's Will Stukely, Mr. Horwood of Bicester. Purple: Madam Tooley (Seedling), Mr. Box of Radclive. Seedling Carnations and Picotees, not claimed. — *Fruit.* Melons: Scarlet Rock, Mr. Jas. Brown, sen., of Stowe. Plums: New Orleans, Mr. James Brown, sen., of Stowe. Apples of the preceding year's growth, Mr. Hartley of Bodicot. Currants. White: 1. (22 bunches to the lb.) Mr. James Brown, jun., of Stowe; 2. (24 bunches to the lb.) Mr. Wilson of Astrope. Red: 1. (32 bunches to the lb.) Mr. Horwood of Bicester; 2. (40 bunches to the lb.) Mr. Coleman of Buckingham. Gooseberries: Heaviest four, 68 dwts. 4 gra., Mr. Hartley of Bodicot. Heaviest: Red, 20 dwts. 20 gra., Mr. Woodward of Bicester; Green, 14 dwts. 12 gra., P. Box, Esq., of Buckingham; White, 14 dwts. 8 gra., Mr. Horwood of Bicester; Yellow, 15 dwts. 14 gra., William Stowe, Esq., Buckingham. — *A Member.* Oct. 29.

CAMBRIDGESHIRE.

Cambridgeshire Horticultural Society. — The October Show was held on October 16, and was rich in fruits, and well attended. Amongst the articles sent for exhibition was a very fine apple, called the Torbay Pippin, belonging to Mr. Richard Clark, and weighing 1 lb. 3oz.; also a fine variety of apples (101 in number), belonging to Messrs. Ronalds of Brentford, corresponding member of the Society. Prizes were awarded as follows: —

Flowers. China-astera. Six best: none exhibited according to the rules; no prize, therefore, awarded. Three best, Mr. Catling. Marigolds. French: Double-striped, Col. Pemberton; African, Mr. Palmer. — *Fruit.* Grapes, out-door (best cluster, not less than $\frac{1}{2}$ lb.): White, White Cluster, Col. Pemberton; Black, Cambridge Botanic Garden, Mr. Biggs. Peaches: Admirable, Mr. Dall. Plums: Coe's Seedling, Mr. French. Apples, table: 1. Ribston Pippins, Mr. Haylock; 2. Golden Pippin, Mr. Gimson. Pears, table: 1. Brown Beurré, Mr. Nash, Foulmire; 2. Crasane, Col. Pemberton. Currants, White, Mr. Dall. Raspberries, Antwerp, Mr. French. Figs, Red, Col. Pemberton. — *Culinary Vegetables:* Peas, Colonel Pemberton. Cauliflowers, Colonel Pemberton. Endive, Mr. French.

Cottagers' Prizes. Grapes, out-door: 1. Sweetwater, William Smith, gamekeeper, Trumpington; 2. Black Cluster, Joseph Beales, Cherryhinton. Apples, table: James Tuck, Windmill Cottage, Harston; baking, George Dickerson, Trumpington. Pears, table, James Tuck, Harston; baking, James Tuck, Harston. Celery: 1. Red, James Tuck; 2. White, Joseph Beales, Cherryhinton. Cauliflower, Wm. Harris Marshall, Trumpington.

Extra-Prizes. Lettuces, Mr. Lestourgeon. Apples. Cambridge Pippin, Mr. French. Seedling: Kitchen, Mr. Brown, Fordham; Table, Mr. Brown, Fordham. Celery, Mr. Hudson. Georginas:

Black Turban, Coronation, Marshall's Purple, Perfecta, Achilles, Triumph, Mr. Biggs. Plant in a pot, *Xylophylla latifolia*, Mr. Biggs. Bunch of forced Grapes (Syrian), Mr. Palmer. Cottager's Broccoli, James Tuck, Harston. Cottager's Seedling Apples, Sam. Beales, Cherryhinton.

A communication from the Rev. J. Brown, one of the Senior Fellows of Trinity College, on the propagation of fruit trees, and on the cultivation of the *Trifolium incarnatum*, was read.

A proposition was also made, that, in future, cottagers who shall compete for prizes shall be *labouring cottagers*, not receiving parochial relief (but not gardeners' labourers); and shall, before they are allowed to exhibit, present to the secretary a certificate of the above facts, and that the articles are grown entirely by themselves; each certificate to be signed by any resident member of the Society, or the clergyman, or one of the churchwardens or overseers of the parish where such cottager resides. (*Cambridge Chron.*, Oct. 23.)

The last Show of this Society, for the year 1829, was held in Cambridge on Dec. 4. Considering the unfavourableness of the season, the Show was well supplied with flowers; and the fruits and vegetables were most excellent and various. Henry John Adeane, Esq., took the chair, and announced the following awards of the judges:—

Plants. Plant in a pot, of any description, in bloom: 1. Superb Clustered Yellow Chrysanthemum, Mr. Searle; 2. Superb Tasseled Yellow Chrysanthemum, Mr. Biggs. — *Flowers.* Chrysanthemums. Double. Six bloom, one of a sort: 1. Superb Clustered Yellow, Superb White, Tasseled Yellow, Quilled White, Curled Lilac, Changeable Buff, Mr. Searle; 2. Tasseled Yellow, Clustered Yellow, Superb Straw-coloured, Paper White, Superb White, Ranunculus-flowered, Mr. Catling. Three best, one of a sort: 1. Superb Clustered Yellow, Superb White, Tasseled Yellow, Mr. Biggs; 2. Superb Clustered Yellow, Superb White, Curled Lilac, Mr. Widnall. Superb Clustered Yellow, Mr. Haylock. — *Fruit.* Grapes: 1. Nice, Mr. Dall; 2. Syrian, Mr. Searle. Apples. Table, two sorts, five of a sort: 1. Ribston Pippin, Green Nonpareil, Mr. Palmer; 2. Fearn's Pippin, Golden Reinette, Mr. Widnall. Kitchen, two sorts, five of a sort: 1. Normington Wonder, Caldwell Apple, Mr. Widnall; 2. Torbay Pippin, Warrington Pippin, Mr. Cranfield. Pears. Table, two sorts, five of a sort: Marie Louise, Gloux Morceaux, Chris. Pemberton, Esq. Baking, three heaviest: Cadillac Pear (the largest weighed 16 oz.), Mr. Brown, Fordham. — *Culinary Vegetables.* Sea-kale, Mr. Searle. Broccoli, Grange's White, Mr. Dall. Celery, Mr. Searle. Mr. Hudson would have gained the prize, but the celery was not in show trim.

Extra-Prizes. Pears, table: Crassane, The Master of Downing. Apples, table, Mr. O'Robin. Kitchen, Cambridge Pippin, Mr. Widnall. Bouquet, Mr. Catling.

A letter was read from Christopher Pemberton, Esq., proposing to give his year's prizes (to which he was entitled at the annual distribution last September) to the Cottagers' Fund. The following regulation was also made respecting the class of cottagers contemplated by the Society, viz., That in future the cottagers who shall compete for prizes shall be labouring cottagers, not receiving parochial relief; and shall, before they are allowed to exhibit, present to the secretary a certificate of the above facts, and that the articles are grown entirely by themselves, and in their own gardens; such certificate to be signed by any neighbouring member of this Society, or the clergyman, or one of the churchwardens or overseers of the parish where such cottager resides. (*Cambridge Chron.*, Dec. 11.)

This Society, it appears from their fifth Report, dated March, 1829, intend to publish, "in the course of this year or the next, the first number of their *Cambridgeshire Horticultural Papers*." A fund for "Cottagers' Prizes" has been formed, by the voluntary contributions of several members. The cottagers must be residents in the Isle of Ely or County of Cambridge, not members of the Society, nor receiving parochial relief. They are also required to produce a certificate from a member of the Society, that the articles exhibited are of their own growth and culture exclusively. This fund deserves the support of all who feel that the comforts and respectability of our poorer neighbours are much promoted by habits of industry and cleanliness, which result from the encouragement afforded to cottagers, to occupy their leisure in the cultivation of their little spots of ground. It is desirable that gentlemen would make this fund known to the objects of it in their respective neighbourhoods. Many of the articles exhibited during the past year by cottagers deserved the highest commendation, and evinced the utility of drawing forth their exertions in the humble cultivation of fruits, flowers, and vegetables."

The Society have procured bronze medals, which may be taken, by gainers of 15s. prizes, in lieu of the money, at their option. The silver medal is the highest prize. Among the prizes offered for 1830, we observe a great number at 7s.; which we think very commendable, as it must greatly increase the number of competitors. — *Cond.*

SUFFOLK.

Ipswich Horticultural Society. — The Fifth and last Meeting for the year 1829 was held at Ipswich on November 17. The judges appointed to award the respective prizes were the Rev. J. S. Matthews, Mr. Vaux, and Mr. Garrod, who decided as follows:—

Flowers. Plant in bloom in a pot: Tasseled Yellow Chrysanthemum, Mr. Lovely. Bouquet of Border Flowers, Mr. Sally. — *Fruit.* Apples. Table (plate of): 1. Ribston Pippin, Mr. Allen, gardener to Colonel Edgar; 2. Golden Harvey, Mr. Burn, gardener to the Right Hon. C. M. Sutton. Kitchen (best plate): 1. Norfolk Beaufin, Mr. Bird; 2. Royal Russet, Mr. Sally, gardener to R. N. Jarrett, Esq. General Collection. Table: 1. Mr. Sally; 2. Mr. Allen. Kitchen: 1. Mr. Sally; 2. Mr. Milborne. Pears. Table: 1. Potter's Fame, Mr. Potter; 2. Chaumontelle, Mr. Kerridge, gardener to Sir William Anson. Kitchen: 1. Black Pear of Worcester, Mr. Milborne; 2. Black Pear of Worcester, Mr. J. Smith. Medlars, Mr. Bird. Grapes, out-door: White, Royal Muscadine, Rev. C. Fonnereau; Black, Burgundy, Mr. Sally. — *Culinary Vegetables.* Cape Broccoli: White, Mr. Bird; Purple, Mr. Lovely. Celery, red and white, Mr. Milborne. Salad, Mr. Sally.

Mr. Turner of Capel St. Andrew presented to the Meeting a small loaf, made entirely of Cobbett's corn, grown by him this season: a species of grain which, he thought, might be cultivated to advantage in this country; and he offered it to the notice of those present, deeming all productions, which promised to be of national benefit, to come within the province of the Horticultural Society. About 300 dishes of fruit were exhibited, amongst which were at least 150 varieties of apple. (*Ipswich Journal*, Nov. 21.)

Dury Horticultural Society. — The last Show of this season was held Nov. 24., and was very excellent. The prizes were awarded as under:—

Plants. Chrysanthemums (six): 1. Mr. Barrett; 2. Mr. Knight. Chrysanthemum in a pot, Mr. Barrett. Plant in a pot: 1. *Canarina campanulata*, R. Bevan, Esq.; 2. *Cactus truncata*, Mr. Rogers. — **Flowers.** Bouquet of tender Flowers, Mr. Hammond. Hardy, Mr. Barrett. — **Fruit.** Grapes, out-door: White, Mr. Lord; Black, Mr. C. Adams. Plums, Coc's Golden Drop, Mr. J. H. Payne. Pears, Table: 1. Maria Louise, Mr. Barrett; 2. Crassane, Mr. Ward, Drinkston. Kitchen: Uvedale St. Germain, Mr. Rogers, Redgrave Hall. Apples, Dessert: 1. Royal Nonpareil, Mr. Stacey; 2. Golden Pippin, Mr. Steele. Collection of Table (30 sorts), Mr. Barrett. Kitchen: 1. C. Blomfield, Esq.; 2. Mr. Knight. Seedling: 1. Mr. Barrett; 2. Mr. Stacey. French Filbert, Mr. Musk. — **Culinary Vegetables.** Cauliflowers, Mr. Kent. Celery, Mr. Rogers. Endive, Mr. Payne. Broccoli, Mr. Hammond. Potatoes, Cambridge Kidney, Rev. C. Dewhurst. Giant Capsicum, Mr. J. H. Payne. Lettuces, Rev. B. Norgate.

Collagers' Prizes (17 candidates). Potatoes: Pine-apple, Ely, Bury; Red, Bradbook, Rougham. Onions, Palfrey, Rushbrooke. Celery, Last, Rougham. Parsnep, Rickwood, Timworth. Apples, Beaufin: Musk, Horringer. Russett: Elmer, Barton, and Last, Rougham. Grapes, Fisk, Barton.

Extra-prizes were given for a loaf entirely of Cobbett's corn, sent by Mr. Stacey, gardener to O. Ray, Esq., which was very palatable bread; and another to Mr. Lines, for loaves one third maize and two thirds wheat. (*Norfolk Chronicle*, Nov. 28.)

NORFOLK.

Norfolk and Norwich Horticultural Society. — The first General Meeting of the members of this Society took place on Nov. 25. Notwithstanding the unfavourable weather, the show of flowers, fruits, and vegetables surpassed the most sanguine expectations. Several contributions to the Show were withheld, in consequence of the inclemency of the weather. One lady (Mrs. Ives of Catton) had ordered 100 ornamental plants to be sent, and they were ready packed up, but she dared not allow them to be removed from her conservatory to Norwich. Although the Society has been established only one month, there are now 215 members, and 70*l.* has been received in donations. This being only an experimental Show, no prizes were distributed. The following is an account of the principal specimens exhibited: —

From Messrs. Mackie. — Forty-six varieties of Apples, among which (for the dessert) the Court of Wick, the Carse of Gowrie, Acklam's Russet, and the Summer Nonpareil, were remarkably fine. Of the Sauce Apples, perhaps the Green Cluster, Ray's Apple, the Winter Broad End, Syke House, and Royal Russet, deserve peculiar notice. A very beautiful specimen of the *Alétris undulata* attracted general attention. To the liberality of Messrs. Mackie the Society is also indebted for specimens of the *Camellia Theda*, *Thuja cupressoides*, *Amaryllis crista*, *Státice mucronata*, *Lechenaúltia formosa*, and *Erica autumnalis*, with a great variety of Chrysanthemums and Primulas. We must not omit to mention a very beautiful specimen of honey in the comb, contained in a cylindrical glass in which the bees worked, weighing altogether 17 lbs., which was obtained without destruction of the bees, and was wrought in the course of a fortnight, in a bee box invented by Mr. Strutt of Suffolk, elegantly ornamented with dried flowers.

Mr. Middleton. — Between 40 and 50 pots, containing 15 varieties of Chrysanthemums, among which the Tasseled Lilac and Early Blush were extremely elegant; also 30 pots of Chinese Primulas, one of which, a fringed White Seedling, was remarkably beautiful.

Coloured drawings of a group of georginas, of a seedling georgina, and a flower of the *Cactus speciosissima*, by Mrs. John Middleton, were much and deservedly admired.

Rev. Wm. Gunn. — Celeriac, and Nutmeg Pippins.

John Gordon, Esq. — A very fine collection of Apples, among which the Palestine Pearmain, Aromatic Russets, and Margils, were of a superior description.

Mr. George Thurtell sent splendid specimens of the Union and Cadillac Pears, Pitmaston Nonpareils, Golden Gloucester, and Court of Wick Pippins; also some very fine white Spanish onions.

E. Lombe, Esq., President. — A very dainty dish of Mushrooms, grown on shelves at the back of his vinery; also some Rampions, a plant of the *Cineraria cruenta*, and Chinese Primulas.

Lieut.-Colonel Mason. — Forbidden Fruit (Citron), matured without any fire heat; and Crimson-fleshed Potatoes.

Mr. Warman. — Specimens of the Gloux Morceaux, and Passe Colmar Pears.

Rev. T. S. Buckle. — Specimens of a seedling Apple, raised in his own garden at Hethersett; and of the Norfolk Pippin.

Rev. Jeremy Day. — Gansell's Bergamot Pear, and Striped Beaufin.

Mr. Norgate. — White Muscadine and Black Cluster Grapes, well ripened on the outward wall.

John Browne, Esq. — Hethersett Pippins, raised in his own garden from seed.

Mr. Matchett. — Potatoes called "Fair Ladies," being remarkably delicate; Black Worcester Pears; and the Cast (coloured to imitate nature) of a Union Pear grown in 1818, in the garden of the late Mr. Crowe of Lakenham, the original weighing 2 lbs. 2 oz. Some sprigs of Arbutus, or strawberry tree, in flower, and with ripe berries; also a Dutch Codlin, weighing 13 oz., grown by Mr. Knights of Pulham Market.

Mr. Henry Muskett. — Very fine Celery.

Mr. John Smith. — A very beautiful seedling Rose, in full bloom.

Mr. Springall. — French Red Potatoes.

Mr. Root, gardener to the late Mrs. Crowe. — A very excellent seedling Apple from the Nonpareil, and striped Beaufins.

Rev. E. J. Howman sent some Mangold Wurzel, of great size and weight.

Mr. R. R. Priest. — A Pineoly (?), brought from America, and containing nuts which are eatable.

Mr. G. Thurtell and Mr. Wilson also furnished the Society with some biscuits and specimens of bread made from Indian Corn.

After the Show, between fifty and sixty of the members (amateurs and practical horticulturists) dined together at the Swan, where an excellent dinner was served up by Mr. Asker. Edward Lombe, Esq., the president, was in the chair, supported by Colonel Harvey, Colonel Mason, Dr. Yelloly, Rev. Dr. Sutton, Capt. Custance, Stratton Marsham, Esq., J. Gordon, Esq., &c. Among the toasts given (after the King, and the Army and Navy) were: — Success to the Norfolk and Norwich Horticultural Society, and that of Bury; the Lord Bishop of the Diocese; with the health of the President (by Colonel Harvey) three times three; the Ladies Subscribers; the Treasurer (J. Kitson, Esq.); the Vice-President (R. Crawshay, Esq.), who was detained in London; the Originator of the Society (T. S. Norgate, Esq.); the Secretary (Mr. E. Norgate); Messrs. Middleton, Mackie, and Geo. Thurtell, and with thanks to them for their choice and splendid contributions of flowers and fruits, &c.

The Chairman observed that "this Institution is to be regarded not merely for the gratification of our own tastes, not merely as promoting a luxurious display upon the tables of the rich, but as having for its object also to raise the moral character of the poorer classes of the community. I have seen," said Mr. Lombe, "above half a century, and I can truly declare that the labourers of the present day are altogether an altered class to what I remember them. I am most anxious to see this Society firmly established, because I do regard it as a means of reviving the character of the good old English peasantry, and which I conceive to be one of its most legitimate objects." Sincerely do we join in this hope: the plan adopted by Mr. Lombe and other gentlemen of fortune, and becoming, we trust, universal, of appropriating to each cottager his rood of land for cultivation, is the first step to the attainment of this object; the encouragement of the labourer in working his strip of ground (and Mr. Lombe said, "if my poor cottagers cannot sell their produce I become the purchaser myself"), is one means of raising his character; it gives him a degree of independence; whilst the prospect of a prize from this Society adds another inducement for exertion, and a praiseworthy motive for emulation and for industry, which is invariably found accompanied with honesty and good order. In support of the idea of the effects to be produced, we were happy to hear the statement of the secretary (Mr. Elias Norgate), that he knew that its establishment had already created an activity amongst the working gardeners, and that its proceedings were looked up to with attention. (*Norfolk Chronicle*, Nov. 20.)

WORCESTERSHIRE.

Vale of Evesham Horticultural Society. — At the Meeting of the Committee on Oct. 15, the London Horticultural Society's medal, presented to this Society, was awarded to Mr. John Hunt of Pershore, for his various fine specimens of fruits, particularly strawberries, and other horticultural productions, exhibited by him at all the meetings of the Society, since its first establishment, as well as during the present year, for which many prizes have been awarded; and for his success in cultivating and raising seedlings, and by grafts, on 27 acres of orchard ground, between 3000 and 4000 seedling apples and pears, and above 800 named grafted fruits, many of which are new, and of improved quality and flavour. — *Edward Savage. Evesham, Nov. 13.*

DURHAM.

The Botanical and Horticultural Society of Durham, Northumberland, and Newcastle. — A Meeting was held on Nov. 13, in Newcastle. The show of fruits, particularly, was very large; and such is the interest now created by the Society, that many of the competitors (of whom there were nearly 30), travelled upwards of 20 miles to attend. The prizes were adjudged as follows: —

For the best dish of dessert apples, and the best dish of plums, two silver medals; and a bronze medal for the best six roots of rampion, to Mr. Robert Turnbull, gardener to the Rev. J. S. Ogle, Kirkley. Best dish of dessert pears, the silver medal; and best dish of mushrooms, the bronze medal; to Mr. Wm. Lawson, gardener to Matt. Bell, Esq. M.P., Woolsington. Best dish of grapes, and the best dish of currants, two silver medals to Mr. Jos. Cook, gardener to Miss Simpson, Bradley Hall. Best bouquet of *Chrysanthemum indicum* flowers, and the best exotic plant in flower, *Salvia splendens*, two silver medals; and for the 12 largest onions, the bronze medal; to Mr. John Ward, gardener to C. J. Clavering, Esq., Axwell Park. Best six heads of endive, the bronze medal to J. C. Lamb, Esq., Ryton. Best dish of broccoli, the bronze medal to Mr. William Kelly, gardener to Armorer Donkin, Esq., Jesmond Cottage. Best six roots of beet, the bronze medal to Mr. John Moderill, gardener to J. C. Anderson, Esq., Point Pleasant. Best bouquet of flowers, the silver medal; and the best six roots of Hamburg parsley, the bronze medal; to Mr. James Scott, gardener to Edward Charlton, Esq., Sandoe.

There were also exhibited a dish of very fine quinces, from an old tree in the garden of the Rev. Mr. Baker of Whitburn, which had been removed a few years ago, and has borne plentifully ever since. They were very much admired for their size and fragrance, and afford a proof that this fruit may be brought to great perfection even in this northern climate.

Twelve new kinds of apples from the garden of the Rev. Mr. Edmonston of Newburn, among which were some very fine dessert apples; and some of the largest and finest oranges we ever saw, from the garden of Charles Bacon, Esq., of Styford; some very curious potatoes, called the pine-apple potato (having very much the appearance of that fruit), from the garden of Mr. Straker of Jarrow Lodge; some very large grey Leasington apples, from the garden of Mr. Laidler; and some remarkably large celery, from the garden of Miss Simpson at Bradley, measuring near 4 ft. 6 in., and about 14 in. in girth at the root, were exhibited.

The show of flowers, particularly of *Chrysanthemum indicum*, were very superb; and the number of beautiful bouquets upon the tables tended very much to increase the interest of the exhibition. Upon the whole, at this season of the year, the Show was of the most splendid description. (*Newcastle Courant*, Nov. 21.)

HAMPSHIRE.

Hampshire Horticultural Society. — A Meeting was held on Sept. 4., and was numerously attended. The exhibition of fruit and flowers was magnificent, being produced from the gardens of Lord Ashtown, Mr. A. Baring, Mr. Beadon, Mr. Fleming, Mr. Garnier, Mr. Ricketts, &c. Flowers, particularly georginas, were in immense numbers: those from Mr. Page's nursery, Mr. Ricketts's, and Mr. Garnier's, excited much attention. The grapes from Mr. Baring's were very fine: the Black Hamburg highly flavoured. Peaches and nectarines were neither fine in appearance nor good in flavour. A few specimens of early apples were fine and good. Melons, particularly the Netted Green-flesh, from Colonel Wall's, were very good. A fine specimen of onions from Mr. Fleming's; and a fine melon and an excellent specimen of cockscomb, from the garden of Miss Smith, were also exhibited. Two plants of Cobbett's corn were shown; one in full leaf, with tassel, displaying the plant complete, 4½ ft. high, bearing five cones; the other with seven cones, topped and stripped of the leaves, in progress of ripening. These plants were produced on the estate of S. R. Jarvis, Esq., and in the garden of John Hampton, blacksmith, at Fair Oak; the latter of whom received the prize awarded by the Society for the production of any plant. On a spot of ground, six paces by two, cultivated by Mr. Jarvis, 98 stalks are now standing, having 316 pods, all of which are in a very luxuriant state, and likely to come to the utmost perfection. Hampton has a still greater number in his garden. The Society expressed an opinion that attention to the cultivation of this species of grain cannot fail to become highly beneficial to cottagers. (*Winchester News*, Sept. 5.)

DEVONSHIRE.

A new Horticultural Society. — A prospectus has been issued of a plan for the establishment of a Society at Plymouth for the improvement of horticulture in the southern parts of Devon and Cornwall, to be called "The South of Devon, Cornwall, Plymouth, Devonport, and Stonehouse Horticultural Society," from which we make the following extract, as likely to be generally useful: —

"The inconveniences to be apprehended from the scantiness of the funds during the infancy of the Society might be obviated by borrowing a hint from the economical plan of the Dumfermline Florists' Society detailed in the October Number of the Gardener's Magazine for the present year (p. 618.), which consists in adjudging *numerical* in place of *pecuniary* prizes, at the several exhibitions; and, at the close of the year, distributing the sum allotted for prizes to the successful candidates in the ratio of their numbers. For example: — Suppose six prizes to be contended for at each exhibition, let these be entered in the prize-book in the following method, with numbers annexed to them in an inverse order: 1st Prize, No. 6; 2d, No. 5; 3d, No. 4; 4th, No. 3; 5th, No. 2; 6th, No. 1. All numbers under 12 to be disregarded. Now let six candidates, A, B, C, D, E, and F, get numbers to the following amount, — A, 21; B, 21; C, 20; D, 18; E, 16; and F, 20; in all 108; and the sum for distribution be 29*l.* 14*s.*: divide this sum by 108, the proportion for each 108th share would be 5*s.* 6*d.*; of which shares A will be entitled to 21, or 5*l.* 15*s.* 6*d.*; B to the same; C to 5*l.* 10*s.*; D to 4*l.* 19*s.*; E to 4*l.* 8*s.*; and F to 3*l.* 6*s.*; in all 29*l.* 14*s.*, the sum to be distributed. By this means, not only will the prizes be more equally proportioned to the respective merits of the competitors, but the competition be kept alive to the end of the season, with a comparatively small fund; since the most successful competitor, at the first, or even second exhibition, may, without a steady continuance of exertion to the end of the season, be distanced by those who were far behind him at the first, and possibly thrown out altogether at the end; while much more emulation may be excited by a small fund in this, than by a much richer one in any other, mode of distribution."

An outline of the plan, and farther particulars, may be obtained from Messrs. Pontey, nursery and seedsmen, Cornwall Street, Plymouth; or Mr. Banks, lecturer on botany, &c., No. 45, St. Aubyn Street, Devonport. The plan seems judicious, and we hope its projectors will be enabled to carry it into execution. Our indefatigable correspondent, Dr. Hamilton, will be an invaluable officer in such a Society: no man is more unceasingly active in his endeavours to do good. — *Cond.*

DUMFRIESSHIRE.

Dumfries and Galloway Horticultural Society. — The Seventh Anniversary Meeting of this Society was held on Sept. 17. On no former occasion was there ever so fine a show of fruit produced; the quantity was large, and the quality very superior. The peaches and nectarines were excellent, but the plums in sorts, and apples, were much admired, and evinced the great improvement which has taken place in the quality of fruit since the institution of the Society. Premiums were awarded as follows: —

An extra-premium was awarded to James Hennan, Drumlanrig, gardener to His Grace the Duke of Buccleugh and Queensberry, for peaches. (The competition was confined to him and James Younger, gardener to W. Younger, Esq., of Craiglands, in consequence of their having been equal last year for that article.)

Flowers. Double and Dwarf Georginas, Thos Kennedy, gardener, Nithbank. Hollyhock, W. Crosbie, gardener, Dabton. — *Fruit.* Peaches: 1. A. M'Gillivray, gardener to C. G. S. Menteth, Esq.; 2. W. Moffat, gardener, Barjarg. Nectarines: 1. A. M'Gillivray; 2. R. Clark, gardener, Raehills. Grapes, Red: 1. James Webster, gardener, Munshes; 2. R. Clark. Plums, Green Gage: 1. W. Moffat; 2. James Webster. Best variety: 1. R. Ross, gardener, Mount-Annan; 2. James Hennan; 3. James Younger, gardener, Craiglands. Pine-apple, R. Clark, Raehills. Melon, Jas. Younger. Pears, from the wall: 1. James Hennan, Drumlanrig; 2. A. M'Gillivray. From standards, John Learmont. Apples, From the wall: 1. A. M'Gillivray; 2. James Hennan. From standards: 1. James Webster; 2. W. Moffat; 3. R. Carson, gardener, Palmerston. — *Culinary Vegetables.* Celery, R. Clark. Green Peas, J. Learmont. Red Beet, James Webster.

Extra-Premiums. Silver Beet, James Webster. *Magnolia grandiflora*, Mr. Porter, gardener to P. Johnston, Esq., of Carnsalloch. Currant Wine, Mrs. Jardine, Assembly Street. A fine new apple, named the Nithbank Pearmain, T. Kennedy, gardener. (*Dumfries and Galloway Courier*, Sept. 22.)

The following address was delivered by the secretary, Mr. Grierson: —

"Since the institution of the Dumfries and Galloway Horticultural Society, in 1813, great has been the improvement in horticulture in all parts of the kingdom, to which the formation of similar societies has materially contributed. At the formation of our Society, very few provincial societies existed; and we had no small degree of merit in starting so early in so important an undertaking, and in attaining a degree of respectability which has rendered our Institution an object of imitation; and I have the satisfaction to say, that the Dumfries and Galloway Society has received the approbation of eminent horticulturists in various quarters; and we have the assurance of their countenance and support to stimulate us to new and continued exertions. It is fortunate that horticulture has attracted such general notice: it is one of those sciences which require seal and perseverance to bring forward their advantages to view; as the stores of nature are unbounded, so is the progress of improvement, when skill and attention are applied to cultivation. It has been said, that he who causes two blades of grass to grow, where only one was produced before, is a patriot to his country. Such is the happy result of horticulture properly understood: not only the increase of quantity, but the improvement in quality; and not confined to quantity and quality, but the endless new varieties of produce which the persevering skill of the horticulturist may discover.

"The happy effects of the great attention bestowed on horticulture of late years, now begin to appear all over the country. To the late Sir Joseph Banks, the father of many important improvements, we are indebted for the progress of horticulture as a science: by his indefatigable zeal and abilities, many new plants were discovered, and introduced into cultivation in this country. Humble as the pretensions of our Society were at its institution, it did not escape his notice and approbation. To diffuse the advantages of his knowledge and industry, I believe, the London Horticultural Society was formed; and, from its extensive influence, persevering labours, and liberal views, the advantages of that Society are now extended, not only over our own country, but have attracted the attention of all Europe; and from every part of the world are the rich stores of

its industry collected, to enrich and adorn our native country. It may be looked upon as the parent stem from which branches have sprung and extended all over the land ; and, like a parent, also, its fostering care is every where felt, not only by the premiums it bestows, but by sharing the produce of its labours, and stimulating by example : our Society has long had to acknowledge its bounty in various ways.

" The Caledonian Society was the first to follow its example ; and now there are few counties in England or Scotland but can boast of a Horticultural Society, many of which display a zeal well worthy of so important an object ; and, every year, the advantage to the country must more and more appear. The operative gardener finds a new stimulus to his industry, and is induced to acquire that knowledge which alone can improve him in his profession, and enable him to excel in the art ; he becomes acquainted with the names, qualities, and proper cultivation of plants ; he sees that it is not enough to put a plant into the ground that it may grow, but he finds it necessary to become acquainted with its nature and properties, the proper soil and manure, in order to cultivate it to advantage, and produce all the improvement its nature will admit of.

" Such are some of the happy effects resulting from the attention paid to horticulture of late years ; and still it may be said only to be in its infancy, as it admits of endless improvement, which must now be more rapid from the opportunities afforded by the experimental gardens, and to which the attention of provincial societies should be particularly directed, as the best means of extending the progress of horticulture, and rendering its advantages permanent. The encouragement held out by the premiums of societies, for the production of new and improved varieties of flowers, fruit, and vegetables, have done much, and may still be continued with great advantage ; but if experimental gardens were formed, even on a limited scale, in various districts, the result would be more important. Gardeners, in general, have neither time sufficient, nor the means necessary, to bestow on experiments ; but in a public garden, devoted solely to that purpose, and managed by men of science, experiments can be followed to their utmost extent ; and those connected with the Institution, as well as the country in general, will gain the advantage of their labours, without the risk of being disappointed in the result of the experiment. Combined with an experimental garden, a library of books on the science will prove of great importance to professional men, affording a source of information not otherwise to be obtained. Much useful knowledge and information has of late been diffused by the labours of Mr. Loudon, and particularly by his Gardener's Magazine, which is within the reach of every operative man. It is a work eminently calculated to promote a taste for horticulture, and to communicate all the new improvements in the art ; and it affords an easy opportunity to gardeners to make the result of their experiments known to the public.

" Of all studies, the study of nature is the most interesting to the eye of the curious : the beauty in plants and flowers is endless, something new is always presented to view, and we feel more and more disposed to admire the wonders of creation. Is it surprising, then, that a study so interesting, so pleasing, and combining so many important objects, should be pursued with so much zeal and attention, when, at every step we advance, the treasures of nature are unfolded to our admiration ; and the greater our exertions, the more is our industry rewarded by the satisfaction of having conferred a lasting benefit on mankind. From these general observations, it would be easy to enlarge on the particular and more minute advantages derived from horticulture.

" In former times, little attention was bestowed on the cultivation of the garden ; consequently, the store of fruit and vegetables was very limited. But it must be obvious to every person, the vast increase of fruit and vegetables ; even potatoes, which, at no remote period, were unknown ; and, not more than eighty years ago, the cultivation of them had to be encouraged by premiums. What would have been the situation of the population of our country without that useful vegetable alone ? To the increased use of vegetables is to be attributed the decrease or almost extinction of some disorders * which proved the scourge of the human race at one period. But, even as a luxury, and as a rational increase to the pleasures of life, we are equally indebted to horticulture : the great variety of new vegetables with which our tables are supplied in succession ; the rich and delicious fruits introduced into cultivation ; together with the extensive variety and beauty of the flowers and shrubs which now adorn our walks and gardens, will prove the truth of all that has been asserted in favour of horticulture."

LANARKSHIRE.

" *Glasgow Horticultural Society.* — On Sept. 9., this Society held their General Meeting, in the Black Bull Hall, when prizes were awarded as follows : —

Flowers. Double Stocks, of six varieties : 1. Wm. Munro, gardener to James Campbell, Esq., Muirpark ; 2. Wm. Knox, gardener to Mrs. Dixon, Levensgrove. Double Hollyhocks, six varieties : 1. Wm. Knox, gardener to Mrs. Dixon, Levensgrove ; 2. Wm. Rankine, gardener to John Hamilton, Esq., Northpark. Double Georginas, three varieties : 1. George Duncan, gardener to Miss Oswald, Scotstown ; 2. James Rutherford, gardener to Miss Fulton, Park ; 3. John Wilkie, gardener to John Wardrop, Esq., Dalmarnock. — *Fruit.* Grapes (best-flavoured), of three varieties, excluding Frontignac and Tokay : 1. James Ross, gardener to Mrs. Dewar, Muirbank ; 2. Ninian Niven, gardener to James Stirling, Esq., Keir ; 3. Peter Donaldson, gardener to Robert Watson, Esq., Linthouse. Peaches, from unfired walls : 1. Laurence Niven, gardener to James Finlay, Esq., Blochairn ; 2. James Ross, gardener to Mrs. Dewar, Muirbank ; 3. Wm. Crawford, gardener to Robert Finlay, Esq., Easterhill. Pears, three varieties, excluding Jargonelles : 1. Peter Donaldson, gardener to Robert Watson, Esq., Linthouse ; 2. John Wilkie, gardener to John Wardrop, Esq., Dalmarnock ; 3. John Gressock, gardener to James Hamilton, Esq. Apples (best-flavoured), six varieties : 1. George Duncan, gardener to Miss Oswald, Scotstown ; 2. J. Gressock, gardener to James Hamilton, Esq., Middleton ; 3. Lachlan Campbell, gardener to Lord Blantyre, Northbar. — *Culinary Vegetables.* Onions, heaviest spring-sown : 1. John Smith, gardener to the Marquess of Bute, Mount Stewart ; 2. Daniel Cunningham, gardener to Sir Archibald Campbell, Garscube. Carrots : 1. John Smith, gardener to the Marquess of Bute, Mount Stewart ; 2. James Sinclair, gardener to Kirkman Finlay, Esq., Castle Toward ; 3. Daniel Cunningham, gardener to Sir Archibald Campbell, Garscube. Red Beets : 1. William Rankine, gardener to John Hamilton, Esq., Northpark ; 2. James Walker, gardener to Archibald Douglas, Esq., Bredisholm.

Any varieties different from those specified above. Flowers : 1. John Gressock, gardener to James Hamilton, Esq., Middleton ; 2. John Brown, gardener to Charles Todd, Esq., Plantation. —

* Particularly the leprosy : vegetables have sweetened the blood.

Fruit : 1. Thomas Carswell, gardener to Andrew Buchanan, Esq., Drumpellar; 2. James Ross, gardener to Mrs. Dewar, Muirbank. — **Vegetables :** 1. James Sinclair, gardener to Kirkman Finlay, Esq., Toward Castle; 2. Charles Ross, gardener to George Buchanan, Esq., Woodland.

The following articles were exhibited, without reference to prizes, viz. : —

From Erskine House, very fine black Damascus grapes, and white Nice grapes, grown in the vinery, and several well-ripened bunches of grapes grown on the open wall; also some peaches, a pine-apple, &c. From Bargany, Ayrshire, a pine-apple, a melon, grapes, apricots, plums, and pears, all in a high state of perfection. From Golfhill, two enormous cabbages, weighing 29 lbs. and 39 lbs. From Scotstown, some Altringham turnips, a fine new variety. From Bredisholm, a quantity of excellent mushrooms, Maltese turnips, French beans and cauliflower. From Gilmourhill, a selection of best sorts of apples, pears, and plums; also extra-fine cauliflower, onions, &c. From Muirpark, Linthouse, Drumpellar, Muirbank, Whitehall, &c. &c., various specimens of fruits and vegetables were exhibited, highly creditable to the gardeners. From Woodhall, most beautiful and well-grown specimens of *Erica retorta*, *Savileana*, and *jasminiflora*, a splendid cockscomb, and a very superior variety of the *Schizanthus pinnatus*, all in pots. From the botanic garden, *Catasctum Claveringi* (very curious), *Amarýllis psittacina* var. *Fúchsia virgata*, *Fúchsia* (new and fine), all in pots; and cut specimens of *Clárkia pulchélla*, and passion flowers of many species, two of them in fruit. From Mount Stewart, *Rosa multiflora*, and varieties of myrtles, from the open ground. From the nurseries in town, a number of green-house plants and hardy evergreens in pots, and cut flowers; and from Kenmuir and other gardens, ample supplies of evergreens and other flowers, with which the hall was richly and tastefully adorned.

To a stranger insufficiently informed as to the state of gardening in the west of Scotland, a visit to this exhibition would have given a strong impression of the professional talent, of the persevering industry, and of the great zeal of our gardeners; and likewise of the wealth, taste, and liberality of the patrons of horticulture in this district. (*Glasgow Free Press*, Sept. 12.)

STIRLINGSHIRE :

The Stirling Horticultural Society was instituted in 1812. It holds three Meetings annually, on the second Tuesday of May and of July, and on the first Tuesday of September. By a recent communication from the secretary, we learn they are preparing to establish a horticultural library. We have recommended to them Richard's *New Elements of Botany*, according to the natural system, Kirby and Spence's *Entomology*, and the *Library of Useful and of Entertaining Knowledge*, for gardeners under thirty; and a few practical works for readers of a more mature age. — *Cond.*

PERTHSHIRE.

Dundee Horticultural Society. — The Spring Meeting was held on May 10., when the successful competitors were as follows : —

Flowers. Auriculas : 1. Mr. Thomas Spalding, gardener, Arthursstone; 2. Mr. John Hampton, gardener, Crescent. Selfs, Mr. John Hampton. Seedling : 1. Mr. James Smith, gardener, Ellangowan; 2. Mr. J. Bisset, gardener, Methven Castle. Polyanthuses : 1. Mr. J. Smith, gardener, Ellangowan; 2. Mr. Thomas Spalding. Seedling : 1. Mr. T. Spalding; 2. Mr. J. Smith. Hyacinths, Mr. J. Smith. Bouquet of Flowers, Mr. J. Hampton. — **Fruit.** Apples, preserved, Mr. J. Kidd. Best variety : 1. Mr. J. Kidd; 2. Mr. T. Spalding. — **Culinary Vegetables.** Cucumbers, Mr. James Kidd, gardener, Rossie Priory. Broccoli : 1. Mr. David Stewart, Lilybank; 2. Mr. James Kidd. Sea-kale, Mr. J. Smith. Lettuce : 1. Mr. John Hampton; 2. Mr. Radley of the Asylum. Leeks : 1. Mr. James Kettle, gardener, Glendoig; 2. Mr. J. Hampton. Onions, Mr. Radley. Cabbage, early : 1. Mr. Alexander Gowck, gardener, Mayfield; 2. Mr. David Mitchell, gardener, Carolina Port. Asparagus : 1. Mr. W. Brow, gardener, Meigle House; 2. Mr. J. Kidd. Apples, preserved : 1. Mr. J. Kidd; 2. Mr. Thomas Spalding. Best variety : 1. John Dick, gardener, Ballindean; 2. Mr. D. Mitchell.

Some early potatoes, full grown, were produced from Ballindean; some good auriculas from Dunhope nursery; a splendid plant of *Acacia armata* from Carolina Port; and some fine stocks and wallflowers from Crescent and Mayfield.

A sweepstakes between Messrs. Baxter and Martin, who did not compete for the Society's prizes this season, was gained by Mr. Baxter. Among those exhibited by Mr. Martin, were two flowers which deserve special notice : they were of his own raising, and attracted the notice of every connoisseur of a fine flower. — *Daniel Urquhart. Dundee, May 14. 1829.*

The August Meeting of this Society was held on the 7th of that month, when the successful competitors were as follows : —

Flowers. Pelargoniums : 1. Mr. James Smith, gardener, Ellangowan; 2. Mr. John Hampton, gardener, Crescent House. Seedling : 1. Mr. J. Kidd, gardener, Rossie Priory; 2. Mr. Thomas Spalding, gardener, Arthursstone. Roses : 1. Mr. James Howe, gardener, Roseangle; 2. Mr. J. Hampton. Seedling : 1. Mr. William Brow, gardener, Meigle House; 2. Mr. J. Howe. Herbaceous : 1. Mr. John Dick, gardener, Ballindean; 2. Mr. D. Mitchell, Carolina Port. Bouquet, Mr. J. Hampton. — **Fruit.** Strawberries : Roseberry and Keen's Imperial, Mr. William Anderson, gardener, Cortachy. Seedling, Mr. A. Gowck, gardener, Mayfield. Currants. Red, Mr. W. Anderson. White, Mr. Wm. Brow. Black : 1. Mr. W. Brow; 2. Mr. D. Mitchell. Raspberries, Red and White, Mr. Jas. Smith. Seedling, Mr. A. Gowck. Gooseberries. Red and Seedling, Mr. Thos. Spalding. White, Green, Yellow, and Largest, Mr. Jas. Kettle, gardener, Glendoig. Second Seedling, Mr. A. Gowck. Cherries, May Duke : 1. Mr. Thomas Spalding; 2. Mr. J. Smith. Black Hearts, Mr. J. Smith. Bigarreaus, Mr. J. Kidd. — **Culinary Vegetables.** Cauliflower : 1. Mr. D. Mitchell; 2. Mr. William Anderson. Cabbage, early, Mr. J. Hampton. Early Carrots, Yellow Turnips, Imperial Lettuce, and Artichokes, Mr. D. Mitchell. Kidneybeans, Mr. J. Kettle. Green Cos Lettuce, Mr. Thos. Spalding.

Some old apples, in good preservation, were produced from Glendoig; and some large carrots and endive from Carolina Port. Some fine carnations and seedling picotees were produced from Rossie Priory; some fine picotees from Crescent; and some fine seedling carnations from Mr. Howe's garden, Perth Road. Some very fine seedling pinks were produced from Ellangowan, and a very beautiful variety of seedling carnations, selfs, and picotees, from Dunhope nursery. (*Dundee Courier*, Aug. 11.)

The Festival Meeting of this Society was held on Sept. 11. The successful competitors were as follows : —

Flowers. Carnations: 1. Mr. John Hampton, gardener, Crescent House; 2. Mr. Alex. Gowck, gardener, Mayfield. Picotees: 1. Mr. J. Hampton; 2. Mr. J. Kidd, gardener, Rossie Priory. Seedling Carnation and Seedling Picotee: 1. Mr. Thomas Spalding, gardener, Arthurstone; 2. Mr. J. Smith, gardener, Ellangowan. Georginas. Double: 1. Mr. J. Kidd; 2. Mr. Wm. Brow, gardener, Meigle House. Seedling, Mr. Wm. Brow. Single, Mr. Thomas Spalding. Hollyhocks, Mr. J. Smith. Stocks (unclaimed), Mr. A. B. C. Border Flowers, Mr. J. Kettle, gardener, Glendoig. Tender Annuals, Mr. J. Kidd. Hardy Annuals: 1. Mr. Urquhart; 2. Mr. J. Kettle. Bouquet of Flowers, Mr. J. Hampton. — **Fruit.** Pine-apple, largest, Mr. James Kidd. Melon. Best-flavoured: 1. Mr. J. Kidd; 2. Mr. J. Dick. Green-flesh: 1. Mr. J. Dick, Ballindean; 2. Mr. J. Kidd. Peaches. From open walls: 1. Mr. J. Kettle; 2. Mr. J. Dick. Hot-house, Mr. J. Kidd. Best variety, Mr. J. Dick. Nectarines. From open walls, Mr. J. Dick. Hot-house: 1. Mr. J. Kidd; 2. Mr. Thomas Spalding. Apricots. Moorpark: 1. Mr. Thomas Spalding; 2. Mr. J. Bisset, gardener, Methven Castle. Brussels, Mr. J. Kidd. Plums. Assortment of: 1. Mr. Dick; 2. Mr. A. Smith, gardener, Cunnoquhie. Green Gages, Mr. Thomas Spalding. White Magnums, Mr. J. Kidd. Some other sort, Mr. J. Kettle. Grapes. Four bunches: 1. Mr. J. Dick; 2. Mr. J. Kidd. Heaviest White Muscats and Black Hamburgs, Mr. J. Dick. Heaviest Grizzly Frontignacs, Mr. Thomas Spalding. Heaviest White Muscadines, Mr. A. Smith, Cunnoquhie. Some other sort, Mr. J. Kidd. Pears. Largest Jargonelle: 1. Mr. J. Kettle; 2. Mr. J. Howe, gardener, Roseangle. Early: 1. Mr. Kidd; 2. Mr. Thomas Watt, gardener, Ruthven House. Late: 1. Mr. J. Kidd; 2. Mr. J. Smith. Apples. Keeping: 1. Mr. J. Kidd; 2. Mr. J. Kettle. Early, Mr. J. Kettle. Largest, Mr. J. Dick. Figs: 1. Mr. J. Kettle; 2. Mr. J. Kidd. Gooseberries, Mr. J. Howe, gardener, Wellbank. Cherries, Mr. J. Kidd. Best variety of Dessert Fruit, Mr. J. Bisset. — **Culinary Vegetables.** Celery and Cauliflower, Mr. Thomas Watt. Beet and Cabbage, Mr. Radley of the Asylum. Carrots, Mr. J. Dick. Onions, Mr. J. Kettle. Savoys, Mr. David Mitchell, gardener, Carolina Port. Best variety of Vegetables: 1. Mr. J. Smith; 2. Mr. D. Mitchell.

A very fine bunch of the Syrian grape was produced from Murie, and a specimen of the parsley-leaved vine, in fruit, from Errol Park; several large bunches of very fine grapes were produced from the garden of Sir John Ogilvy of Bank, and some very fine plums from Annat Gardens, Rait; a very good seedling plum was produced from Arthurstone, and a half-hardy melon from Mr. Dick, Crawford Priory; a very large gourd, and a good specimen of Cobbett's corn, were produced from Glendoig; two very large turnips, one measuring 30 in. in circumference, were produced by Mr. Crammond of Craigie; a very large savoy by Mr. David Forrest, Blackness, and a very fine variety of carnations from Dudhope nursery. (*Dundee Courier*, Sept. 15.)

ABERDEENSHIRE.

Aberdeenshire Horticultural Society. — At the Competition of this Society, held in Aberdeen, on Aug. 26, the judges awarded the prizes as follows: —

Flowers. Carnations: 1. David Gairns, Glenbervie; 2. James Cruickshank, Carnation Cottage. Pinks: 1. William Barron, gardener to Colonel Campbell of Blackhall; 2. David Gairns, Glenbervie. Georginas: 1. Mr. William Davidson, jun., Aberdeen; 2. Mr. James Walker, nurseryman. — **Fruit.** Melon: 1. Geo. Johnston, gardener to the Earl of Aberdeen, at Haddo House; 2. Wm. Gallow, gardener to Sir Michael Bruce of Stenhouse and Scotstown, Bart. Grapes: 1. Thomas Milne, nurseryman, Sunnyside; 2. John Davidson, gardener to Lord Kennedy, Dunottar House. Peaches and Nectarines: 1. William Anderson, gardener to David Young, Esq., Cornhill; 2. David Gairns, gardener to J. M. Nicholson, Esq., Glenbervie. Apples, Dessert: 1. Mr. Thomas Wilson, Clinterty; 2. William Smart, gardener to Dr. Bannerman, Polgownie Lodge. Plums: 1. Charles Berry, gardener to R. B. Allardyce, Esq., of Ury; 2. Peter Archibald, gardener to Wm. Moir, Esq., of Park. Gooseberries. Largest: 1. David Gairns, Glenbervie; 2. James Walker, nurseryman, Aberdeen. Quart of: 1. William Gallow, gardener, Scotstown; 2. Robert Adam, Schoolhouse, N. Banchory.

An extra-medal was awarded to William Wales, gardener to R. W. Duff, Esq., Fetteresso Castle, for 36 sorts of new seedling gooseberries. There was a beautiful and numerous display of very fine melons; and the grapes and other fruits, georginas, carnations, and pinks, were of the best description. Among the many exotic plants placed on the table, were very beautiful specimens of double balsams, double Russian stock, yellow Chinese rose, &c. &c. (*Aberdeen Journal*, Sept. 2.)

The November Meeting of this Society was held on the 4th of that month, when the judges awarded the prizes as follows: —

Flowers. Stocks: 1. Mr. William Davidson, jun., Aberdeen; 2. Capt. Anderson, Skene Square. — **Fruit.** Apples: 1. Emperor Alexander, Mr. William Davidson, jun., Aberdeen; 2. Ribston Pippin, George Johnston, gardener to the Earl of Aberdeen, Haddo House. Pears: 1. Swan Egg, William Wales, gardener to Colonel Duff, Fetteresso Castle; 2. Autumn Bergamot, John Davidson, gardener to Lord Kennedy, Dunottar House. — **Culinary Vegetables.** Onions, Reading, sown 1st of August, 1828: William Lawson, gardener to Major Fisher, Devanha: 2. Red, Wm. Wales, gardener, Fetteresso Castle. Beet Roots, George Cardno, gardener to Geo. Hogarth, Esq., Woodhill. Carrots: Altringham, Duncan Cadenhead, gardener, New Bridge; Long Red Surrey, Alexander Diack, Mile-end. Celery, blanched: 1. George Cardno, gardener, Woodhill; 2. Wm. Lawson, gardener, Devanha. — **Forest Trees:** Thomas Milne, nurseryman, Sunnyside.

Two specimens of seedling apples, melons, and cucumbers, at this season, a large vegetable marrow, naturalised exotics, large groups of double and seedling georginas, &c., were entered for the extra-medal: when, after investigating the whole, the judges awarded the medal to Mr. James Walker, nurseryman, for a very large group of beautiful double georginas. Among other articles produced was a specimen of bricks, manufactured by Mr. Allardyce, Clayhills, designed as edgings for garden beds or borders, that will, it is presumed, supersede that of box, either for neatness or durability. [We should be glad to have one or two of these bricks sent us as specimens, with the price per hundred; some of the nurserymen may include them in a parcel, when they are sending, at any rate.] (*Aberdeen Journal*, Nov. 11.)

THE
GARDENER'S MAGAZINE,
APRIL, 1830.

PART I.
ORIGINAL CORRESPONDENCE.

ART. I. *On the Anatomy of the Vine.* By WALTER WILLIAM
CAPPER, Esq., Bath.

(Continued from p. 25.)

Sir,

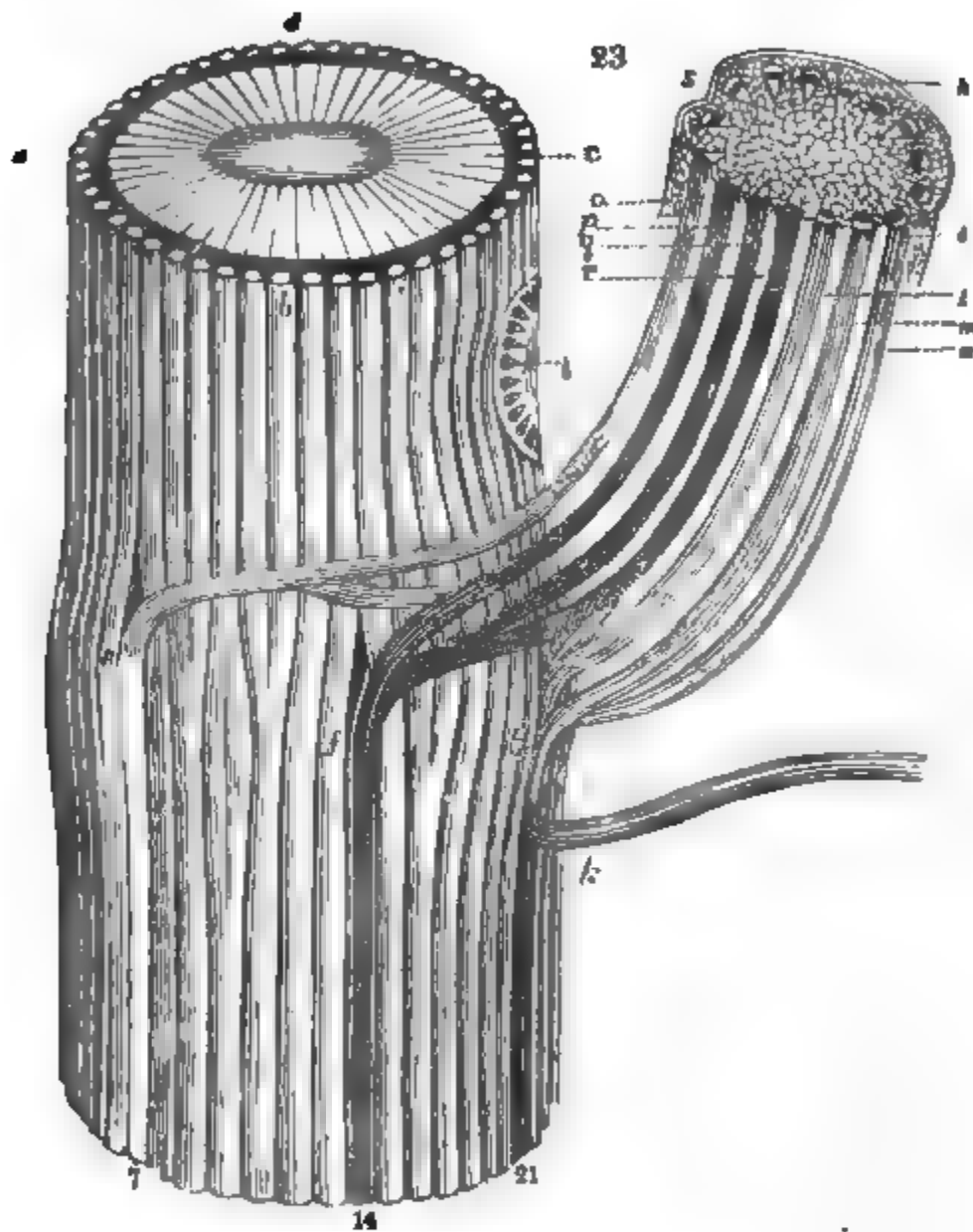
BEFORE I proceed with my second description of the anatomy of the vine, I beg to express my best acknowledgments to you for the superior manner in which my drawings have been engraved; and, I can assure you, such attention will stimulate me in my future exertions. I have again to lament, as I shall on every communication, the great expense you incur respecting them; but I rely more upon the drawings than I do on my own remarks, to make the subject understood by the practical gardeners, whose attention, as I said before, I wish most particularly to attract.

In the latter part of my former letter, which I had the pleasure of addressing to you, I described the external appearance of the elongated vessels of six divisions, which had united to form the base and stalk of a leaf, as in p. 13. *fig. 2.*, at *e f g h i k*.

I will now represent the internal organisation of the three vessels (*e f g*) which are shown in *fig. 23.*, and also part of a joint, with the upper and lower ends of two collets attached; the cuticle and cellular texture are removed, that the twenty-four bundles in front of the vascular texture may be distinctly seen; the upper end of it also represents a horizontal view of the 48 divisions of a collet, as before explained.

The seventh, fourteenth, and twenty-first divisions, reckoning them across at the bottom, are supposed to be the lower ends of the divisions of *e f g* in *fig. 23.* The twenty-first, or

g, has its bundle of vascular texture raised up to *k*, to show how distinct it is, and how easily it is removed from the liber underneath; its upper end separates into three divisions, and they continue so up the stalk of the leaf, forming three bands, or sets of vessels, *l m n*.



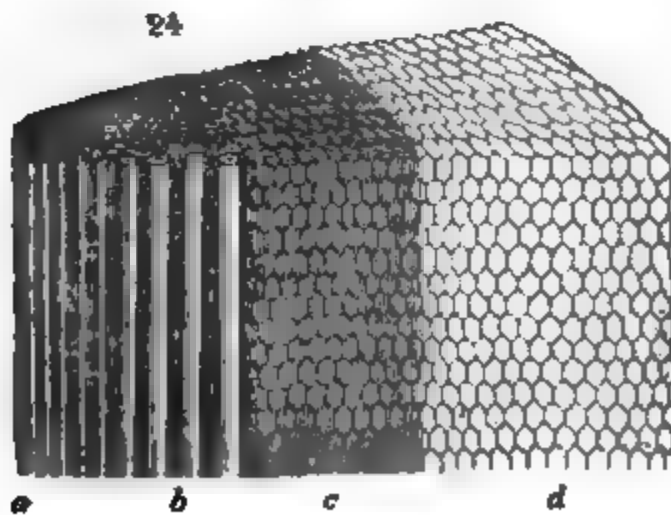
The fourteenth, or *f*, division, has its vascular texture entirely removed, that the whole of the liber may be traced from the bottom to the top; at the joint, or letter *f*, it divides into several bands, which continue upwards to *p q r*, the lowermost on the right-hand side joins the band *l*, and another on the opposite side is connected with the band *o* by its lateral branch at the lower end. The seventh, or *e*, division, from the bottom to the letter *e*, represents the alburnum entirely divested of its bundle of vascular texture, and also of its liber, that the spiral and ascending sap vessels may be distinctly seen protruding from the upper end of this division at *e*; between the arch formed by the sixth and eighth divisions

closing over them. These vessels separate as the others have done, uniting in like manner with those on each side; the one on the right hand joins the band *p*, the other on the left side joins a band from the opposite side of the stalk. Although the spiral and ascending sap vessels of the band *o* are only represented in the figure, yet they have been covered with the liber and vascular texture from *e* upwards to the top at *o*. The number of bands, as I have called them, by the subdivisions of the vessels of the six claws are generally from fourteen to eighteen. At the base of the stalk of the leaf, they unite or inosculate one with the other the whole way round, as may be easily conceived from those represented in *fig. 23*.

The various vessels of these bands, which have arisen from the six divisions, proceeded from very opposite directions of the collet; yet the whole of them, except the concentric layer, are now collected together, to form the stalk of the leaf, where they are placed similarly to what they were originally in the collet. Let us compare them together, as we have a drawing of each in *fig. 23*. First, the medulla is in the centre of both, round them are the divisions, but those of the stalk of the six divisions are divided into sixteen bands or parts, by which they possess sufficient strength to support the broad leaf above them; yet their spiral vessels are upon the margin of the medulla; next to them the ascending sap-vessels, as those of the alburnum would be, if the concentric layer did not exist in the collet; round each are the vessels of the liber, to which are attached the vascular texture; the cellular texture fills up the space between the bands, as it does between the collets, and both are covered with the cellular texture and the cuticle. So that the most scrupulous examiner must admit the correctness of the comparison, that they are not only similar in their component parts, but also in their situations.

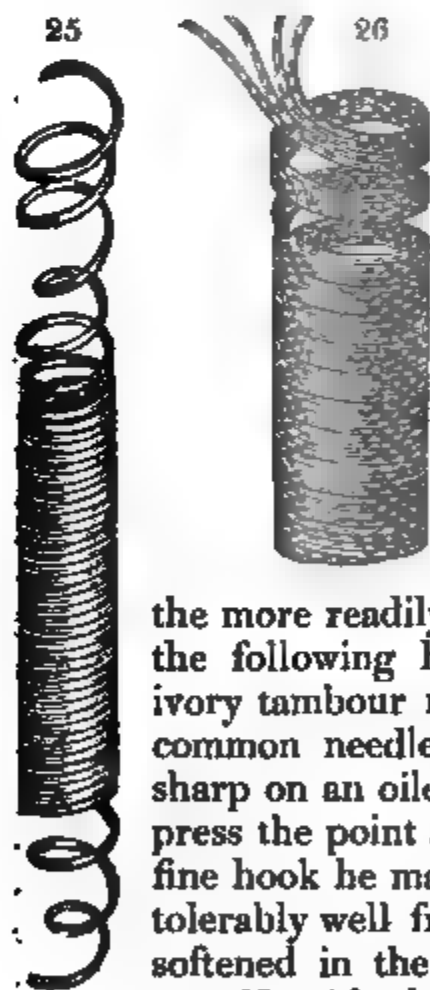
The vessels of these bands are extremely delicate during the summer, so much so, that I should recommend their being examined just before the fall of the leaf, when they are much firmer, and somewhat more distinct.

Fig. 24., which represents a band, may assist the examination; for *a* is supposed to be the



spiral vessels, as they appear within the narrow point of a band, lying next to the medulla. Each of them consists of a single vessel, which is coiled round, so as to form a tube, just as a long piece of very fine wire would be, if twisted upon a round iron rod. The edges of these twists lie on each other, and are united, forming a tube; otherwise these vessels could not receive and carry forward the secreted juice of the liber, from the horizontal vessels of the alburnum, to the extending shoot in the spring, and afterwards to the leaves.

The next in the band are the ascending sap-vessels (*fig. 24. b*). They are somewhat larger than the spiral, and like them in appearance; it is only by examining them with a very powerful short-focus glass, that the difference can be distinguished; for they consist of *four vessels* coiled round upon each other, forming a tube, instead of *one*, as was the spiral vessel. By referring to the *figs. 25. and 26.*, the difference



between them will be easily perceived. Owing to their transparency in their natural state, they are as difficult to be distinguished as the spiral vessels. I should therefore recommend the examiner to place first a lower collet, with a joint and leaf upon it, in the solution of the prussiate of potash, and afterwards in a weak solution of the sulphate of iron, when the spiral and ascending sap vessels of the stalk will be filled with the blue precipitate, which will enable him

the more readily to distinguish them. He may find the following hints useful:—Let him procure an ivory tambour needle handle, and place in it a fine common needle, which should be made extremely sharp on an oiled Turkey stone; let him afterwards press the point against it, to bend it round: with this fine hook he may separate these vessels of the band tolerably well from each other. With needles, first softened in the flame of a candle, I have made for myself, with the assistance of a small anvil, and a light watchmaker's hammer, various small dissecting knives, chisels, &c. The half of these ascending sap-vessels may be seen lying in the alburnum, by their shining, silvery paper-like appearance; but to detach an entire one, as they are found in the stalk of the leaf, is extremely difficult: in consequence of which, it was a long while before I could

satisfy my mind respecting their form and external organisation. *Fig. 27.* represents one as it is found in the alburnum,



consisting of an entire tube; for it will not separate into the four distinct coils, as the one will readily do when taken from the stalk. The internal surface of these ascending sap-vessels, both in the alburnum and in the stalk of the leaf, have attached to them an innumerable number of short projecting fibres, somewhat like *a* in *fig. 27.*; whether they are absorbents in these tubes, like the lacteals in the animal stomach, or moving mechanical agents, excited into action by the vital principle to propel the sap forward, I do not pretend to say. The same kind of vessels will be

found in the alburnum of the common cane (*Calamus rudéntum Linn.*), where they are much larger and firmer; and, with a little trouble, an entire tube may be extracted.

The part *c* of *fig. 24.* represents the liber of a band. As I described its organisation before, when I referred to *figs. 3.* and *4.*, I have now very little to say respecting it, except that it is a continuation from the collet, and that these vessels are extremely difficult to be distinguished in the band. Perhaps the readiest way, and one that will prove the most satisfactory, is to cut a stalk through with a sharp razor, as it leaves the smoothest surface, and apply to it the sulphate of iron; when the vessels of the liber will be discovered by the black precipitate upon them, as I mentioned before, from their naturally containing gallic acid.

The vascular texture is marked *d* in *fig. 24.*: it will be readily found at the back of the liber; but whether it is surrounded in the band by the cellular texture, as it is in the collet, I have not been able to ascertain. By looking on the outside of the stalk of a leaf of a vine, it will readily be distinguished from the cellular texture that lies between the bands, from its being of a darker colour; and, on removing the cuticle, the vascular texture will be immediately recognised by its fine ligneous hexagonal vessels, which are rather like those at *d* in *fig. 24.*; but they are in no wise tubular in the vine, either in the band, or in the bark of the collet. The horizontal view of these vessels in the two bundles at *c c* in *fig. 4.* ought to have been represented hexagonal, instead of round: it was drawn in my early days of investigation.

Fig. 4. is a tolerably good representation of part of a collet, cut with the assistance of the little regulating machine; but *fig. 24.* has not the most faint resemblance to the ori-

ginal band, although the character of the vessels is tolerably correct; for they are so extremely small, and so closely connected together, that the figure may be considered more to show their relative situation than for any other purpose.

The vessels of the claws, with the base and stalk of the leaf, may be dissected in two ways. The first, by filling the spiral and ascending sap vessels with the precipitate of the prussiate of iron, as I mentioned before, which will discover them when the cuticle and cellular texture are removed, by the black shade through their vascular texture and liber. The second, without making any such preparation, but removing directly the cuticle, the cellular and vascular texture, and also the liber; when the spiral and ascending sap vessels will be readily discovered, by their delicate silver-like appearance. On reaching the separated bands of the stalk of the leaf, it would be better to leave them entire, and to remove only a little of the cellular texture from between them.

For the present, I shall defer exhibiting the continuation of these vessels from the stalk into the leaf, until I have described those of the vascular and cellular texture, and also the spiral vessels, because an explanation of them will facilitate my communication upon the subject of the leaf. But I beg to premise, that whatever I may advance respecting them will be very short of the clear and voluminous description given of the various vessels of leaves, by Dr. Thomson, in his *Lectures on the Elements of Botany*; which volume should be in the hands of every person, not only the anatomist but the botanist, as it is superior, in my opinion, to any ever published: and I have to lament, with many others, that this gentleman has not favoured the world with the second volume, to complete such a very valuable work.

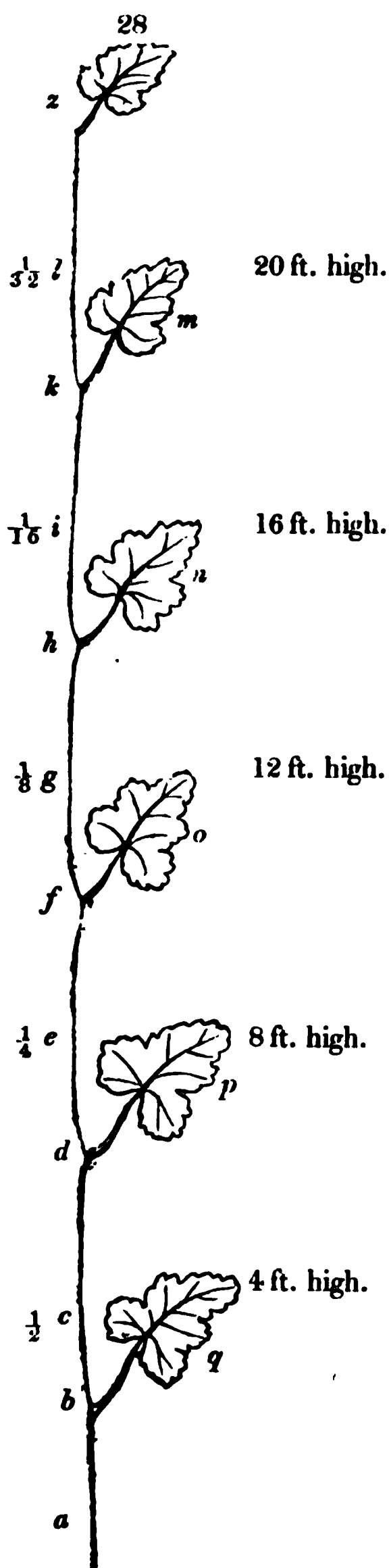
The vascular texture has not been so much noticed by the anatomists of vegetation as I think it deserves; but this observation may arise from my great partiality for these vessels: for they have been a beacon to me in my researches, by the prominence of their large bundles, which have directed me to a very interesting object, and removed very conflicting circumstances, as the following description will show. These bundles distinctly exhibit the outside of every division of the collet, as well as every band in the stalk of the leaf, when the cuticle and cellular texture are removed. *Fig. 23.* represents 24 of them, though reckoned across both at the top and at the bottom, although three divisions have been taken from them to form part of a leaf. I hope it has been clearly proved that 6 divisions out of the 48 are appropriated to

form a leaf. Now, admitting my average statement of 48 divisions forming the whole number of a collet, such a number would be disposed of in forming the first 8 leaves; because the 6 divisions, multiplied by the 8 leaves, would be equal to the 48: consequently, reasoning from the above conclusions, a shoot could not extend in length beyond 8 leaves. There is another fact, which is well known to every gardener, that a summer shoot of a vine will extend 10, 20, and 30 ft. in length, and produce at least 2 leaves on every foot of its growth.

These are certainly three very conflicting circumstances, as far as relates to those facts; but how easily are these apparent inconsistencies removed, when we further investigate the beautiful arrangement on the outside of the divisions of a joint, and discover that some of the remaining divisions are paradoxically divided into two parts; and that each of them should become in size equal to the original one from which they proceeded, for the purpose of replacing those which had been appropriated to form the leaf! These subdivisions may be readily understood by referring to *fig. 23.*, and tracing from the bottom the 9th, 11th, and 16th bundles, upwards to the joint; where it represents those three bundles of vascular texture, each dividing into two parts, forming, in the upper collet, the 8th, 9th, 11th, 12th, 16th, and 17th divisions, being the additional number of three divisions; and three others would be formed, in like manner, on the opposite side of the joint. So that, although 6 divisions were taken away from the lower collet, others are subdivided to make up that deficiency which otherwise would take place in the upper collet; and a similar operation takes place at every joint.

How two halves should, in every respect, be equal in size to the original division from which they proceeded, and contain a similar number of vessels, each consisting of medulla, spiral vessels, alburnum including its vessels, liber, vascular and cellular texture, may be considered another of those wonderful and secret works of nature which it is beyond my abilities to explain: I shall, therefore, only proceed to describe the further supposed subdivisions that may take place in an extended shoot of a vine, forming a nominal calculation upon one of 20 ft. long. We will suppose, on every 4 ft. in length, that 8 leaves shall be growing: consequently, those leaves will require the 48 divisions of a collet, as before mentioned. As we proceed, we will make a slight sketch (*fig. 28.*) of our progress, for it will facilitate the calculation.

The 9th division in *fig. 23.* shall be the one selected; and it shall be *a* in the sketch.



a, then, is the supposed division, during its growth in the shoot from *a* to *c*, the first 4 ft.: it is divided at *b* into two parts; consequently, at *c*, it has only half its original vessels of *a*.

At *d* it is again divided; so that, at *e*, it has only one fourth of its original part of *a*, and the shoot is extended 8 ft. long.

At *f* it is further divided; and, at *g*, it can only have one eighth of the original parts of *a*, and the shoot is extended 12 ft. long.

At *h* it is also divided; and, at *i*, it can only have one sixteenth of the original parts of *a*, and the shoot is extended 16 ft. long.

At *k* the last division takes place; and, at *l*, it can only have one thirty-second of the original parts of *a*, and the shoot is extended 20 ft. long.

Yet this small portion of the thirty-second part of *a* is sufficient to form an entire division, equal in size to the original from which it first proceeded.

Now, admitting such calculation to be tolerably correct, this thirty-second part must be connected with the vessels of the five leaves below, at *m n o p q*; and, in addition, this upper leaf marked *z* has five other such subdivisions, to which it is, in like manner, united. Therefore, to find the number of leaves laterally connected with this upper leaf, we must multiply these five leaves below *m n o p q* by the 6 divisions of the leaf *z*, which will give 30;

so that the upper leaf will be actually united with 30 leaves by this beautiful and paradoxical operation of Nature.

I have many times reckoned the divisions of the collets of a long summer shoot, and I have found, invariably, a differ-

ence in number at every joint: sometimes an increase, at others a diminution; but, upon the whole, the number of divisions at the top corresponded nearly with those at the lower end, although the shoot was of considerable length.

I flatter myself that many will repeat these experiments. Should any one have the patience to examine and dissect the whole of the bundles of a summer shoot of a vine, I should esteem the communication of it, either to Mr. Loudon or myself, with a drawing, a particular favour; but, I can assure him, it is a labyrinth only to be discovered by one of great patience and perseverance. I have many times attempted the task without success: as far as I went, I could clearly perceive the system was extremely regular, and that every bundle had its particular place of destination. The middle of July is the best time to make the experiment, when the bundles of vascular texture are firmly attached; but, a month later, they lose a little of their vital action.

The use of the vessels of the vascular texture of the bark is to convey part of the descending sap, or secreted juice, downwards, *during the summer*. My endeavours have not been so successful as I could have wished, in filling these vessels with a black precipitate, similar to my experiments in p. 24., by the sulphate of iron. It is fortunately, however, of little consequence, as these vessels in some other plants are filled with a milky fluid, which arises in the leaf, and descends by similar vessels. It requires some little management to retain this fluid in the branch, when it is detached from the parent tree, during the time of removing the cuticle and cellular texture while you lay bare these bundles of the vascular texture. The plant I should recommend for that purpose is commonly called the caper shrub (*Euphórbia Láthyris*): it is found in most gardens; the seeds of it are about the size of caper buds, the stem is of a tolerably hard substance, and these vessels in it are firm, and readily discovered. Choose for the experiment, in the autumn, the lower part of a summer shoot of a two years old plant: tie a collet tightly round, with some thick cotton thread; then cut it off below the bandage, when you will find very little discharge from the upper separated parts, owing to the ligature upon them; but the lower remaining stem will bleed profusely. These vessels, by the above precaution, will be tolerably well under your control while you try any experiment upon them. The moment that one is punctured, it discharges immediately its milky fluid: they must be separately cut, to empty them, which shows they have no communication with each other. These vessels of the vine commence at the lower end of the summer shoot, and continue to the point of the leaves, carry-

ing downwards, as I said before, the descending sap of the leaf. I could enlarge further on the important use of these vessels, but I beg to defer it until I have described other vessels, into which, I apprehend, they convey their contents; and I will endeavour to have it prepared for your June Number.

Innumerable are the experiments that may be performed on a vine, by those who have an active mind, and a knowledge of the vessels as set forth in p. 16. and 17. of this Volume, with the assistance of the chemical tests; and to the young anatomist of vegetation I will apply the same words as those which have so often been repeated by the able anatomists of the human frame: "That it is only by dissection a thorough knowledge can be acquired." What I can describe by words or drawings will ever fall short of the sublime and beautiful organisation of the different parts of a vine. For instance (to simplify the subject), *fig. 23.* is drawn, showing only the 9th, 11th, and 16th bundles of the vascular texture, tamely branching off, each into two divisions; but, in the original, the diversity of the separation and reunion of some divisions of the joint can only be compared to the tracery or open work of the upper part of a Gothic church window; and the divisions from a bundle, to the beautiful groining of the arches of that style. I would recommend not only the admirers of this science, but those of the Gothic style of architecture, to dissect a joint: they will be highly gratified by the elegant display of these bundles at the joint, before they take their perpendicular direction into the upper collet.

I purpose, in the autumn, to point out some interesting experiments respecting the formation of the second year's liber; but it will require a previous preparation of the vine to perform them well. Those who are disposed to investigate the subject should train some of the last summer's shoots, at least 15 in. apart, and nail the extending shoots of this year in a regular open manner, stopping them at the 10th or 12th leaf, or 4 leaves above the fruit. But the part to which most attention should be paid is at the base of the shoot, where the remains of the winter cradle is to be found, as shown in *fig. 1.* between the letters *b* and *d*. This rough part I wish to be displaced by the fingers; and, should any buds arise, these are to be removed without bruising the cuticle; and frequently, during the summer, the place is to be rubbed gently with the fingers, to keep it clean and smooth.

I remain, Sir, yours, &c.

Bath, Feb. 7. 1830.

WALTER WILLIAM CAPPER.

I observe some of the letters of the figures belonging to

my former communication are misplaced ; but the following alteration with a pen will correct them : —

Fig. 3. The upper letter *f*, above *z*, should be *g* ; the second *g*, above *z*, should be *f* ; the first *a*, above *z*, should be *f* ; the letter *a*, below *z*, should be placed just above *z*, to point out the spiral vessels ; the letter *s*, near the bottom, should be struck out. — *Fig. 4.* The two letters *m m* should be changed into *ll* ; and the two letters *ll* into *m m*.

ART. II. *On Cottage Husbandry and Architecture, chiefly with reference to certain Prize Essays received on Cottage Gardening, and to projected Encyclopædias on these subjects.* By the CONDUCTOR.

NINE prize essays have been received, to three of which, instead of one, as promised (*Gard. Mag.*, vol. v. p. 713.), we have awarded the first prize (a copy of the *Encyclopædia of Plants*, and a copy of the *Hórtus Británnicus*), and they are published in the three articles succeeding to the present. To each of the remaining six essays we have awarded the second premium, a copy of the *Hórtus Británnicus*, and from them we have published extracts, in the form of notes, to different parts of the essay immediately following the present article. This essay, by "A Practical Gardener," we know to be written by an Englishman, a chemist, a general reader, and an excellent practical gardener ; he has a family, and has for several years been head gardener at an extensive residence in the west of England, and kept a cow and pigs. This essay may be considered as particularly adapted for England. The third essay, by "The Cottarman's Friend," is by a Scotchman, a scientific and experienced gardener, farmer, and general manager of an estate in Perthshire ; it is excellent, and may be considered as particularly adapted for Scotland. "J. P.," the author of the second essay, is a stranger of whom we know nothing further than that his essay is exceedingly well drawn up, and altogether worthy of the first prize. It contains an excellent calendar, and tables, and may be considered as a manual of culture, both for the cottage labourer, and the independent cottager. Some of the authors of the other essays we know, or think we know, from their handwriting, and others we do not know. The most scientific of these essays is by "T. A. ;" but his calculations are founded on the very best crops, and therefore impracticable. They are all written with the best feeling, and there is not one of them that would not have been worth publishing under ordinary circumstances.

The present introductory essay is to be considered as supplementary to the three which follow, and chiefly as an attempt to show the practicability of every cottager growing his own fuel. We have also shown how independent or proprietor cottagers may grow their own malt, hops, sugar, cider, perry, wines, spirit, tobacco, substitutes for tea and coffee, opium, and other medicines. We have added a plan of a labourer's cottage, chiefly with a view of showing the mode of heating and cooking by the description of fuel (faggot-wood), which we recommend to be grown. (We might have also given a plan for an association of dwellings to be heated by steam, as a substitute for detached cottages, in manufacturing towns.) All the subjects touched on in the three following essays, with several others, will be farther developed in intended *Encyclopædias of Cottage*

Husbandry, and of Cottage Architecture, outlines of the contents of which works will be found in the advertising sheet to the present Number. To these outlines we earnestly invite the attention of such of our readers as are able and willing to render us any assistance.

TWENTY years ago, during the war, landed proprietors found it most profitable to pull down cottages and to let their lands in large farms; and that they should follow the course which they found most lucrative was very natural. It is just as natural, in the present times, for them to return to the cottage system, in order to save the rent of land from being eaten up by the poor's rate.* It forms no part of our plan to recommend indiscriminately the building of cottages, and the attaching of land to them; but we do presume to recommend, without any exception, that no cottage should be built without a certain quantity of land being attached to it unalienably; and that every cottage now existing, and without land, or without one or other of the quantities of land that we shall define as requisite for certain purposes, have, without delay, as much land added and unalienably attached as makes up the quantity alluded to. We repeat, that, wherever it is deemed proper that a cottage should exist at all, we recommend, without hesitation and without exception, that land be attached to it, and the following are our reasons:—

1. Every cottager requires, for the consumption and use of his family, a certain quantity of culinary vegetables and fuel.

2. Every labourer, mechanic, operative manufacturer, or small tradesman,

* “A system has been acted upon for some years of taking the small farms from the occupants, and adding them to the large farms, already too large in many instances; hereby, not merely hundreds, but thousands, of honest, industrious, frugal, and hitherto independent, yeomen, with their families, have been turned adrift, and reduced to absolute beggary. Yet, truly deplorable as is this statement, it is not, by any means, the worst part of their case. I am painfully compelled to add, that by thus depriving them of their honourable support, and driving them in crowds to the parish officers for relief, a dreadful injury has been inflicted upon their morals and principles: able healthy men are no longer ashamed of receiving parish relief, even the desire to avoid a workhouse, which was formerly such a spur to honest industry and frugality, exists no longer; and I shudder to say, that crimes, which were almost unknown in this class of society, are now becoming common and familiar. And what is, perhaps, not the least dangerous circumstance, a large share of our population feel no longer an attachment to their native land, its government, or its laws; the game laws they hate even to execration; and, in fact, seem almost ready to welcome any change, however violent, under an idea that their condition cannot be lower or worse than it is at present.” (*G. Z.* [whom we know to be a highly respectable man], in *Farm. Journ.*, Feb. 22. 1830.)

“Out of the pecuniary distress of the country have arisen acrimonious and hostile feelings between the different orders of society, which threaten the security of society itself.”—*Lord Radnor in the House of Peers*, Feb. 25.

“The landowners of England have sinned grievously towards the labouring classes; they ought, for very shame, to hide their heads, whenever the condition of the labourer is mentioned. But we are told that the sins of the father shall be visited on the children, and their day is now come. It is useful that the world should sometimes see examples of retributive justice.” (*Morn. Chron.*, February 26.)

has, or ought to have, some hours of leisure every day, for the purpose of health, recreation, and enjoyment.

3. Recreation is not idleness, but a change in the kind and degree of labour or occupation.

4. The raising or culture of all his vegetables, including potatoes for his family, and one or two pigs, poultry, &c., and fuel, may be made the recreation of the cottager and his family, without infringing one hour on the time allotted to his business.

5. Being so raised, they will cost the cottager less than what they could be produced for by those who raise them as a matter of business and not of recreation.

6. The sense of property, the possession of a comfortable home, and the social affections and local attachments thereby produced, will greatly increase the enjoyments of the cottager, and in every way render him a better member of society.

These reasons are unexceptionable in point of theory, and confirmed by experience and observation, not only with respect to this particular country, but to one country as compared with another. Compare Tuscany, Switzerland, and Bavaria, with any part of Great Britain. In all the reports that have been published respecting the poor and the poor's rate in England, it will be found that those were always the last to seek relief from the parish who occupied land. If the case of the cottagers of Ireland should be brought forward to show that a cottager may occupy land, and even possess a cow, and yet be very miserable, we reply that the land of the cottager in Ireland constitutes his business, that is, his main source of existence; whereas we propose that only such men as have and follow some regular business as a means of existence, such men in short as are required by the existing demand for labour, should have a cottage and garden, and that they should depend on the latter for such a part only of their means of existence as they can procure during their hours of leisure.

As what we recommend, therefore, cannot be considered as forcing the cottage system, we do not think it liable to the reprehension of those who maintain that by adding to the comforts of the poor we are only preparing for their future misery by facilitating their increase. The more a man's enjoyments are increased and his character raised, the less likely will he be to risk the diminution of these enjoyments, and the loss of respect among his equals, by an early or rash marriage, and by the creation of offspring without regard to what is to become of them. The most destitute are always those who marry first; because, when the degree of suffering is at the lowest point, any change is sought for relief.* The possession of

* Speaking of the wages of farm-servants in Cambridgeshire being scarcely sufficient to maintain them, the excellent and practical John Denson observes, — "Thus knowing their situation cannot possibly be worse, and seeing no hope of it being made better, they marry; and I believe it will be generally found that those who have the least prospect of being able to support a family are the most eager to rush into the cares of one." (*A Peasant's Voice*, &c., p. 19.)

"It would be natural to suppose that distress so aggravated would reduce, or at least check, the increase of an unemployed and now burdensome population, — that no man would marry with misery thus staring him in the face; but, so far from this being the case, on the contrary, in the present horribly perverted state of things, want actually drives the pauper to marry. He says, 'I have now about 3s. or 4s. per week; I will get a wife, and then the parish must give me a maintenance.' This is both the language and the practice; population is, in consequence, advancing rapidly, and so is our poor's rate." (*G. Z.* [before quoted], in *Farm. Journ.*, Feb. 22. 1830.)

comfort is by far the best security for prudent conduct in the passing generation *, not only of the poor, but even of those who are better off; and, for that generation which is in progress, our safeguard is comfort joined to high and equal education. (See *Parochial Institutions, &c., Gard. Mag.*, vol. v. p. 692.)

Having shown the necessity and advantage of attaching land to all cottages whatever, we shall next endeavour to ascertain what quantity ought to be attached. For this purpose we shall first enumerate the different objects to which the land may be applied, and we think these for the dependent or labouring cottager may be reduced to the first four following, and for the independent or proprietor cottager to the succeeding three.

1. To supply the cottager's family, including pigs and poultry, with vegetables and potatoes.

2. To supply the cottager's family, including pigs and poultry, with vegetables, potatoes, and faggots for his oven.

3. With vegetables, potatoes, fuel, and barley for his malt.

4. With vegetables, potatoes, fuel, barley for his malt, and the keep of a cow.

5. With vegetables, potatoes, fuel, barley for his malt, the keep of a cow, and bread corn.

6. With vegetables, malt, a cow, and bread corn.

7. With vegetables, malt, a cow, bread corn, and mangold wurzel for his sugar and spirits; fruit trees and vines for his cider, perry, and wine; tea and coffee, or substitutes for these articles; tobacco, opium, and the ordinary family medicines.

8. All these objects, with flax or hemp for his linen, and wool for stockings, flannel, and upper clothing.

On the last three objects we shall for the present say little, as they are not so applicable to this country as to other countries less advanced in the division of labour; and especially as they would entail on the cottager labour which might interfere with his regular employment, instead of recreative labour to be performed in his mornings and evenings. The first four objects may all be attained by the labour of any able-bodied man with the occasional assistance of his wife and children, in hours which would be otherwise spent unproductively, or perhaps viciously.

1. For the first object it seems to be allowed by almost all the writers on the cottage system that one rood is the average quantity that will suffice. It has been shown by some of our prize competitors that less will do; but this proceeds on the supposition that every process succeeds and produces a full crop, which is never the case in even the best-cultivated gardens. There may be cases, however, as in those of yearly farm-servants, in which the potatoes are grown by the farmer, and in that case the quantity of land may be reduced we think one-half, i. e. to 20 rods. †

2. and 3. For the second and third objects, that is the whole or a part

* "The idea that a certain degree of comfort causes an increase of population is visionary; to prove the fallacy of it, we need only look at the numerous progeny of our half-starved labourers; and to compare it with the progeny of those who spend more for a dinner and wine on a market-day than they give to support the family of a labourer for a week; some of whom have not even a child to inherit their property." (*A Peasant's Voice*, &c., p. 19.)

† John Denson is decidedly of opinion that no cottage ought to have less than an acre, because less than that quantity, he says, will be insufficient to employ the labourer and his family during leisure hours. (*A Peasant's Voice*, p. 25.)

of the fuel required in addition to vegetables, the quantity will vary considerably, according to the part of the country where the cottage may be situated. More fuel will be wanted in the northern than in the southern parts of the island, and in districts where coal is so cheap that fuel for a year may be purchased for the rent of an ordinary acre of land, we should propose that the cottager raise only fuel for his oven or stove.

To raise the whole of the fuel for a cottage of the lowest class will require 1 acre of middling land. To raise faggots sufficient to heat the oven or stove, say 170 times a year*, will require about three fourths of an acre; and hence we may conclude 1 acre to be the minimum, and $1\frac{1}{4}$ acre the maximum, for this class of cottages. The data on which these quantities are founded will be afterwards given.

4. The fourth object, which to vegetables and fuel adds barley for malt, requires a rood more than the third object, or from $1\frac{1}{4}$ acre. to $1\frac{3}{4}$ acre.

5. For the fifth object, which includes vegetables, the whole of the fuel, barley for malt, and the keep of a cow, the quantity will vary according to the quality of the soil, the climate, and the circumstance of its being in aration or in pasture; because, though in the latter case he will not derive so much produce from a given surface, what he does obtain will be got with less labour. In Rutlandshire it has been found by Lord Brownlow and others that $2\frac{1}{2}$ acres were sufficient to keep a cow a year; and that there, where every cottager has a cow, from that quantity to 3 acres was invariably allowed. Probably, at an average of the country, 3 acres may be requisite; and this, with one acre for fuel, a rood for malt, and a rood for a garden, will give $4\frac{1}{2}$ acres for the maximum quantity of land for this class; or, if only part of the fuel is to be grown, $4\frac{1}{4}$ acres.

6. The sixth object, to vegetables, fuel, malt, and the keep of a cow, adds the requisite quantity of bread corn. John Denson says, "He could mention several labourers that have brought up their families and paid their way entirely on the produce of 2 or 3 acres of land:" (*A Peasant's Voice*, p. 12.) and we do not doubt it; because, in that case, his whole labour being bestowed on the land, it would be cultivated to the utmost, and probably a part of the horticultural produce sold at good prices. The same practical writer is "convinced that a sober active man would keep a cow, a breeding sow, a good fat hog in the sty, and grow plenty of corn and vegetables for the consumption of his family, and pay rent, rates, and taxes, from the produce of 3 acres of land." (*A Peasant's Voice*, p. 27.) If we add, in countries where fuel costs more than the rent of an acre of land, an additional acre for wood, and a quarter of an acre for malt, this will give $4\frac{1}{4}$ acres; but we should say, for the average of soils and situations, 5 acres. It is obvious that this quantity of ground could not be cultivated by a labourer at his leisure hours; nevertheless, if we suppose one acre devoted to wood, another to permanent pasture, and that the remaining 3 acres are in part worked by the hired labour of a steam or horse plough, we shall find that the labourer would still have a good many weeks' labour, in the course of the year, to dispose of to others.

7. Vegetables, malt, a cow, bread corn, sugar, spirits, cider, perry, wines, tobacco, substitutes for tea and coffee, opium, and the ordinary family

* Supposing one faggot to be used every time the oven is lighted, then	
twice a week in May and September gives	- - - 16
Once a week for baking, during June, July, and August	- - - 12
Three times a week, during October and April	- - - 24
Four times a week, during November and March	- - - 32
Seven times a week, during December, January, and February	- - - 84

medicines, might easily be obtained by an additional half acre. From a portion of mangold wurzel as much sugar as would supply the family could easily be extracted, and the rest of the roots and the refuse of the sugar manufacture given to the cow. A part of the sugar in its first, or molasses, state might be fermented and distilled, so as to produce a good spirit; and another part fermented with yest and hops, or the substitutes for hops, so as to make a very good beer. Where bees can be kept, sugar, beer, wine, and spirits can be prepared from their honey, and candles from their wax. The cider and perry might be obtained from standard fruit trees in the ring-fence of the premises, or from standards thinly scattered throughout the whole $5\frac{1}{2}$ acres. The wine might be made from gooseberries, currants, elder berries, and other fruits, and from the grapes of a vine made to cover the whole of the house and offices. Coffee might be obtained from chiccory or dandelion roots, or from the seeds of the *Astrágalus boëticus*, which is extensively grown for that purpose in Hungary and Bavaria; and tea (though not so good an imitation as the substitute for coffee) from the dried leaves and flowers of different species of *Verónica*, from the leaves of *Dryas octopétala* as in Sweden, of *Rùbus árticus* as in Norway, of *Saxífraga crassifolia* as in Siberia, of *Prùnus spinosa* and *àvium*, and of the leaves of the common sweet briar, as in different parts of Europe. The dried leaves of the common black currant afford a substitute for green tea, which very few can detect, and perhaps these leaves, and those of the common sloe, or plum, in the proportion of one fifth of the former and four fifths of the latter, form as good an imitation of the tea generally used by cottagers as can be obtained. Every cottager may distil a coarse brandy from gooseberry or other wines, and whisky from wort of malt, or from beet root molasses; and he may give the former the flavour of noyeau with the kernels of cherries or with a few peach leaves, and the latter the flavour of gin with juniper berries.

8. An additional acre would keep three or four sheep for wool, and admit of a rood of flax or hemp every year, which would keep any ordinary family in linen of every description, and for the most part in woollen; but in scarcely any part of the world could it be desirable to attempt the home growth and manufacture of these articles, now that the influence of machinery and steam is felt from pole to pole.

We shall now give our reasons for proposing to introduce a new feature into the cottage system of Britain, that of every cottager (not living in a coal or peat district) raising a part, or the whole, of his own fuel. Every person who lives in the country, or even looks at a newspaper, is aware that the sufferings of the poor from cold, during the winter season, are fully as great as from want of food; and that pilfering from woods, hedges, or fences, is one of the commonest of crimes. In former times the cottager's fuel was obtained from the bushes which grew upon the commons and waste lands; but, since these have been enclosed, the poor man has no resource but those of purchasing, stealing, or begging. In the coal districts, or in those where turf is used as fuel, or where wood is very abundant, a common day-labourer may perhaps be able to procure his fuel by purchase: but these districts are few; and in by far the greater number the labourer of necessity procures his fuel by pulling the hedges, cutting here and there a branch of such trees as come in his way, breaking gates and other wooden fences, and pilfering from the coal heaps or faggot stacks of his richer neighbours.

Where there are children, the task of catering for firewood is generally committed to them. The mother sends them out, as soon as they can walk, to bring in sticks; and they may be seen gathering them in the nearest plantations or woods, and pulling them from the hedges along the roads and lanes; in short, wherever they can get them. This is the commencement of the modern education of the peasant. In this way the first lessons of thieving

are taught to both sexes; the endeavours at concealment lead to lying, and to the dread and hatred of all those who have any thing that can be stolen; thus crime is rooted in the infant mind, and long before the age of manhood it ripens into habit. But all the fuel that a labourer can procure in this way is still insufficient for his purposes, and he is only kept from absolute starvation by a parochial supply, or charitable contributions. If, therefore, the labourer could be rendered as independent in his fuel, as he frequently is, and in all cases might very easily be, in his potatoes and vegetables, his comforts would be greatly increased, his moral character raised, and the parish and his neighbours who have property would in every way be gainers. That this fuel may be provided, and that very easily, we can prove beyond contradiction.

We shall first endeavour to show the proper use and economy of fuel, and in what manner common faggot wood, or the spray and shoots of ligneous plants of three or four years' growth, may be rendered as effective as billet wood or mineral coal, both in warming the air of a house, and in the operation of cooking. By the use of mineral coal, both these objects may be effected by means of our common open fire-places; but it would not be easy to maintain this temperature by burning spray or faggot wood in the same manner; it might no doubt be done, but the quantity of fuel consumed would be out of all proportion to the benefit obtained. The failure of spray or faggots in heating the air of an apartment, does not arise from deficiency of the heat produced, but from the rapidity of combustion, by which great part of the heat is carried directly up the chimney, and such a current of air produced there, that, after the flames of the spray have subsided, the draft is continued in consequence of the heated sides of the chimney, and thus the warm air of the apartment is rapidly exhausted to supply the current. The place of the warm air in the apartment is as readily occupied by cold air, and the room, which ten minutes before was very hot, is now very cold. A second fire of spray is immediately required, to be attended in its turn by the same results. The same effects, but in a less degree, are produced by fires of billet-wood, roots, or in fact any description of wood. There is one reason for this which deserves to be mentioned, because it is not very obvious to those who are accustomed to coal fires. Wood fires, and especially the non-resinous kinds, produce very little soot, and scarcely ever a soot which adheres to the chimney. The sides of the chimney being therefore free from what every body knows to be a powerful non-conductor, a coat of soot, they become rapidly and powerfully heated, which consequently accelerates the current of air, and continues this current at a rapid rate much longer after the fire has gone out than in the case of a chimney where the fuel is coal. It is clear, therefore, that wood is not a proper fuel for the description of fire-places in use in this country. Burnt in the centre of an immense hall, and its smoke allowed to fill the upper part of this apartment, as in former times, or in logs or thick chumps on the ground, as in the wide open fire-places of America, it is more effective; but in small raised fire-places, with narrow chimneys, it is very inadequate.

On the Continent, where the fuel is almost every where wood, and where, from the greater severity of the winter, greater attention is required to heating apartments, the air is warmed and cookery effected by distinct processes. The air of the room is warmed by burning small wood, spray, faggots, or wood of any sort in a stove, and cooking is performed on raised hearths by charred wood, or on low hearths by chump wood. Something of the same kind is what we propose to introduce into the cottage system of this country. Heating we would effect by flues in the floor of the kitchen or living-room, when that floor was on the ground, and could be composed of vertical strata of gravel or small stones alternating with smoke flues, the whole being covered with tiles or broad pavement. But when the kitchen or room to be heated was so situated that the flues could not

be made in the floor, we would effect heating by a very simple stove composed of common bricks and paving tiles, and occupying the whole, or a part of one side of the room. This side should always be one of the inner sides in cottages already built, and in cottages to be built, the stove may in almost every case be made to serve as a partition wall. Cooking we would effect in open fire-places as at present, and either with large wood, that is, pieces of 2 in. and 3 in. diameter, or with the half-charred faggot wood that is produced in stove fires when the furnace and ash-pit door are closed before combustion is completed. Whoever has seen the heating and the cooking of the Continent will allow that the methods we have proposed would completely answer the ends in view, and, to all who could not purchase coal, be a great improvement in the economy of fuel.

Having shown how we propose to apply faggot wood to the purposes of heating and cooking, we shall next endeavour to show that 1 acre of land of middling quality will produce a sufficiency of this wood for an ordinary cottager.

In order to ascertain what quantity of ground will grow a faggot, we shall consider a faggot to consist of eighty black Italian or Lombardy poplars, or Huntingdon willows, of three years' growth. These we shall suppose to be grown in rows, 2 ft. apart, and the plants 6 in. distant in the row. At this rate every plant will occupy a square foot, and as there are 43,560 ft. in an acre, that space will consequently produce 544 faggots every third year, or every year 181 faggots of three years' growth, which are thirteen more than will be wanted for the purposes of baking and warming throughout the year. Now these 13 faggots being composed of 1040 shoots, say only 1000, suppose them to be distributed at equal distances throughout the acre, and allowed to attain five years' growth instead of three, this will give 200 trees a year, three fourths of the length of which will cut up into bundles of billet wood from 2 in. to 5 in. in diameter for cooking on the open fire; and the side spray, and the remaining third part of the stem, may be made into faggots, to make good the requisite number for the oven, or to compensate the injury which these 1000 larger trees may do to the 33,560 among which they are placed: this calculation we think is sufficient to show that an acre of wood applied to cottages on our construction, and probably even to those on the ordinary plan, will supply fuel for every year. We are confirmed in this calculation by several experienced gardeners whom we have consulted on the subject. When a plantation was once established perhaps the simplest mode of management would be, to fill a fifth part every year, separating the larger wood for the open fires, and faggoting up the smaller for the oven.

When a part of the fuel can be purchased, say coal, or turf for the open fires, half an acre might probably be found sufficient for the oven, more especially if the garden were surrounded by a hedge in which were a few poplars, and the interior contained a few standard fruit trees. The prunings from all of these, and the occasional cutting down of a poplar, would become effective to a certain extent both in the oven or stove for heating, and in the open fire-place. *

Whatever quantity of ground is allotted should be trenched 3 ft. deep at least; but, if the soil is dry, it may be trenched 5 ft., not casting the top in the bottom, but mixing them together. (*Encyc. of Gard.*, § 1870.) A plantation so formed would give a produce very superior to that of com-

* John Denson says, "that the haulm of half an acre of potatoes will serve for heating a cottager's oven;" but we would rather litter the pig with the haulm, and no doubt he would agree with us in opinion had he fuel otherwise provided.

mon native copse, where the soil has never been touched; it would continue improving for many years, and, when it began to be less productive, might be trenched over at the rate of one division a year, and replanted with trees of a different natural order. The locust, the ash *, or the bird cherry might succeed the poplar or willow families, or the site of the copse might be changed, and the ground cropped for another series of years with culinary vegetables and potatoes. The rooting up and replanting would of course not take place with the whole quantity at once, but only with a fifth part at a time, which would equalise the labour, and enable the cottager to effect it with ease at his leisure hours. The cutting over should be done in the autumn, or beginning of winter, and the carrying home and faggoting, or otherwise preparing for the fire-place and oven, may take place in dry weather during winter as opportunity offers. In thin barren soils, a larger quantity of ground than an acre may be required, and it may be advisable to plant the Scotch pine or larch, or birch, or possibly even furze or elder; but we do not believe there is either a soil or a situation in Britain where 2 acres, properly planted and managed, would not produce all the fuel which a cottage would require, if it were economised in the manner we have described.

An acre of land of average quality being thus estimated as sufficient to produce the whole of the fuel required by a common cottager, we think that in all those parts of the country where the fuel a cottager requires would cost a sum equal to the rent of such acre, it would be his interest to pay that sum for the use of an acre. As he could receive nothing from this acre for four or five years, and must bestow a great deal of labour in trenching it, and procuring and planting the sets or trees, he ought to have it for at least ten years without rent. But, in consideration of this, he ought to be held bound to trench and plant it in a proper manner, to cut it down in regular portions, and to leave it in a proper state, and fit for the immediate use of his successor.

Malt. — To grow his own malt would perhaps be of no great advantage to a cottager in this country, and at the present time; but, where an opportunity offers, it may be well for him to know how easily it can be done. The average produce of a rood of barley may be taken at 20 bushels, which properly malted will produce 25 bushels of malt, and this brewed will produce, according to Cobbett, 450 gallons of good beer. But, as Cobbett only allows a labourer's family 274 gallons a year; viz. 2 quarts every day from the 1st of October to the 1st of March inclusive, 3 quarts a day during the months of April and May, 4 quarts a day during the months of June and September, and 5 quarts a day during the months of July and August; and as this quantity of 274 gallons can be produced by 15 bushels of malt, or 12 bushels of raw barley; a rood of a fair crop will give the beer requisite, and 8 bushels of barley more for the pigs and poultry, for distilling a little whisky, or for husking as pot-barley.

* According to Marcus Bull the ash is one of the most valuable of woods as fuel; the birch is also very valuable; the wild cherry (*Cerasus virginiana*) is to the ash as 55 is to 77; the Lombardy poplar as 40 to 77. (*Experiments to determine the comparative Value of Fuel, &c.*, Philadelphia, 8vo, 1827.) The comparative quantity of these and other woods produced on an acre in a given time, say from three to seven years, would be valuable data with a view to cottage economy. Any nurseryman, by devoting a few square yards to each sort of tree, could make the experiment with very little trouble, and with no loss; because the trees might be taken up by the root, weighed, and sold, or, if not sold, replanted. We commend the experiment to Mr. Donald of the Goldworth nursery, who has proved himself a real friend to the cottager.

Pot-barley.—The husking can only be well done at a barley-mill; but, by steeping the barley for six hours, and then kiln-drying it, or drying it on the flued floor, or on the stove, or in the oven, the husks will come off in a common corn-mill, or by rubbing in a mortar with a pestle. The garden and also the field pea are steeped and husked in this manner for split peas and pea-meal; but the pea is not, in general, a profitable crop for the cottager.

Malting is nothing more than an artificial mode of making the barley vegetate, by steeping it in water, and fermenting it afterwards in a heap, to produce heat enough for germination; and then arresting its progress towards forming a plant, by kiln-drying. The cottager may put the quantity of barley which he intends to brew in a bag, and immerse it in a tub of water for an hour; then take it out, lay it in a heap on the floor of a warm place, and cover it over with straw, or with two or three bags, to produce a moist heat, and bring on vegetation: when the radicle is three fourths of an inch long, he may spread it out and dry it, either on the hottest part of his flued floor, or on his heating flue, or in his oven. But, according to some, very good ale may be produced by grinding or bruising unmalted barley, and mixing it with a small quantity of ground malt, leaving it in mash at a heat of about 150° for two or three hours. The malt is introduced to hasten the fermentation of the bruised grain, which is said to be as complete as if it had lain a fortnight on the malting-floor. Cobbett disapproves of this mode of making beer which, he says, produces strength; but a flat heavy beer, that lies heavy on the stomach, has a bad taste, and is unwholesome, and therefore we do not recommend it, unless in cases of necessity. Perhaps sweet beer, such as is easily made from honey, treacle, or beet-root molasses, might be preferable. As unripe potatoes, and the point or least matured end of ripe potatoes, are found to vegetate soonest, so unripe seeds of every sort are also found to vegetate soonest; therefore, that part of a cottager's plot of barley which he intends for malt, should be cut a few days sooner than the remaining part which he intends for pot-barley, meal, or feeding his pig.

It is a very common practice in several parts of England, when wheat, barley, or other grain is sprouted in the ear in consequence of a wet harvest, to carry home these ears, dry them, and use them as malt. The seeds of ryegrass, if sprouted, we have no doubt, would make very good malt.

There is a mode of making beer from sugar described in the *Cabinet Cyclopædia*, vol. iii. Domestic Economy, p. 207., which is almost as easy as making tea. The flavour, the writer says, is superior to that from malt; and its lightness on the stomach places it above all competition.

Hops.—Nothing can be easier than for every cottager to grow his own hops. He may either plant a single hill, as the term is, of four plants on a surface of a square yard, to run up four poles 12 or 15 ft. high; or he may plant five or six roots round an arbour; or, if his cottage has a rustic veranda, a plant may run up each column. As a substitute for hops, the marsh trefoil (*Menyanthes trifoliata*) is employed on the Continent; and, it is said, was formerly used in this country. One ounce of the dried leaves is said to be equivalent to half a pound of hops. The plant is of easy culture in moist soil. All the plants of the same natural order, *Gentianeæ*, and especially the different species of *Gentiana*, might be used in the same manner, more particularly *G. lutea*, *rubra*, and *purpurea*. In Switzerland, a spirit is distilled from the roots of *G. lutea*. The dried roots of *Gèum urbànum*, common in hedges, are sliced, enclosed in a thin linen bag, and suspended in the beer cask, by the brewers of Germany, to prevent, it is said, the beer from turning sour, and to give it the odour of cloves. There can be little doubt that several other plants belonging to the Rosaceous tribe *Dryadeæ* would have a similar effect: such, for example, as *Agrimonia*, a most fragrant bitter, and *Dryas*, *Cómarum*, *Potentilla*, and *Tormentilla*, powerful astringents. A similar use is made of the roots of *Acorus Calamus* and

ginger, the seeds of coriander and caraway, and the skins of oranges and capsicums.

Sugar. — The idea of every cottager growing his own sugar is, perhaps, of still less value than the preceding one respecting malt; for, assuredly, when the West India colonies become independent, and trade becomes free, events which must happen ere long, cane-sugar will be much cheaper throughout Europe than that of the beet-root or any other plant of the temperate zones; unless, indeed, chemistry should discover an easier mode of transforming starch into that principle. However, in the interior of Germany and America, it may be desirable sometimes to have home-made sugar; and, therefore, we shall here state that the produce, in France, of a ton of mangold wurzel is a cwt. of sugar; and, as half a rood will grow at least 3 tons, here are resources for 3 cwt.; or say only half that quantity, which is as much as any cottager will use in a year. The pulp of the root, after the juice is pressed out, it is found in France, will fatten at the rate of a bullock an acre: and hence the pulp of half a rood will be found of no small value for the cottager's cow and his hog-tubs. The following process for manufacturing beet-root sugar, most suitable for the cottager, has been kindly furnished to us by our intelligent and much esteemed friend Mr. S. Taylor, the editor of the professional department of the *Country Times*: —

Sugar from Mangold Wurzel. — “ Dear Sir, I believe you are aware that the manufacture of sugar from the beet root or mangold wurzel is more likely to succeed on a large than on a small scale. Still, I see no reason why, because we cannot do all we *wish*, that therefore we should not do all we *can*. If we cannot, on a small scale, get 5 per cent, let us put up with 3. ‘Half a loaf,’ whether of sugar or of bread, ‘is better than none.’

“ The quantity of land required to produce 1 cwt. of brown sugar, will, of course, in some degree depend on the quality of that land, and its state of fertility, natural and artificial. On this I have a word to say. The occupier of a poor hungry soil may fancy that he has but to apply an additional portion of good rich manure to obtain as great a weight of root as his more fortunate neighbour on a kind deep loam. ‘Let him not lay that flattering unction to his *soil* ;’ for assuredly he will find himself in error therein. As great a *weight* of root I think it likely he might get; that is no hard matter to effect by dint of artificial means: but the question is, what would be the probable amount of sugar from roots so obtained? You will not be surprised to hear that the weight of roots may be doubled; and yet not only shall the weight of sugar not be doubled, but even that it shall be diminished thereby. We grow enormous crops of mangold wurzel near London; but they are unfit for the purposes of sugar-making, and the reason is obvious: the weight is made up of aqueous, not saccharine, matter. I say this to caution the occupiers of small patches of ground against the practice of over-manuring. The French crops do not average 15 tons an acre of root: this is, undoubtedly, a lower rate of produce than even, for sugar-making, they might safely resort to: 20 and 25 tons might, and ought to be raised on an acre. Now for the quantity of sugar from a given weight of root: 5 per cent of brown sugar is now generally obtained in the French manufactories; that is to say, 1 cwt. of sugar from 1 ton of root; but, as I have observed in a former part of my letter, it is not likely that a cottager, with his imperfect apparatus, should be able to obtain any thing like this amount. However, he must do the best he can, recollecting that even half this quantity will pay him.

“ Suppose, therefore, we call it half the quantity which a large manufactory would obtain, or $2\frac{1}{2}$ per cent, and suppose that he grows 25 tons an acre of root, he must have about 15 rods of land in order to produce 1 cwt. of brown sugar. This, be it observed, is a low estimate, and, I have reason to believe, far inferior to what would be obtained by common care and a

judicious application even of the general run of utensils to be found in most cottages and small farm-houses.

"The Variety of Mangold Wurzel made use of."—The next thing to be considered is, the variety of mangold wurzel the best adapted for making sugar. Without stopping to particularise all the different varieties, it is sufficient to state that the one known by the name *Bèta álba* is by many held in great esteem for this purpose, though much depends on the season. A friend of mine in France, who has given the subject much consideration, assures me that any of the common varieties will answer; and that, though usually called *beet-root*, it is not hence to be inferred that the garden beet alone is used for this purpose, but the common field mangold wurzel. The time of sowing is from the middle of April to the middle of May. Cleanliness, by repeated hoeings, is essential. This, I take for granted, every good cultivator is well aware of. As soon as the leaves begin to turn yellow, the root may be said to have arrived at maturity; and it is time to take up the crop, and to begin the process of sugar-making, an operation which continues from October to February in the larger manufactories. Take the roots up dry, and keep them dry; the smaller the heap the better, because the least fermentation will effectually prevent the formation of sugar. The difference in amount and quality of sugar is always in favour of that made at the beginning of the season. The root, in keeping, undergoes a chemical change, often amounting to a total loss of its saccharine matter; although its outward appearance indicates no such change.

"Process of Sugar-making."—The roots should first be washed, and then rasped, to reduce them to a state of pulp. Of course, in large manufactories, they are provided with rasping machines; and it is somewhat difficult to find a substitute on a small scale. I should imagine, though, that a stout iron plate, punched with triangular holes, the rough edges of which are left standing, somewhat after the manner of a nutmeg-grater, might answer the purpose, only that I would have it somewhat concave instead of convex. Upon the rough side of this plate I would rub the roots by hand. If there should be a cider-mill and press within a reasonable distance, it might answer to take the roots thither, slice them, and pass them through the mill. When by these or any other means they are reduced to pulp, the juice should be pressed from the pulp, which is thus done:—It is put into canvass bags, not too fine, so as to impede the running of the juice, nor yet so coarse as to let the pulp through the meshes. The bags should be so fitted as, when pressed, to occupy about an inch in depth. Most manufactories use about 25 of these bags at one pressing, but this depends on the power of the press. Between every bag of pulp is laid a sort of osier hurdle, to allow the juice to percolate freely from the press into the juice-cistern below. The operation of pressing should immediately follow that of rasping. This point should be particularly attended to.

"Defecation."—The juice being expressed from the pulp, the next process is the defecation of the juice, and here, too, no time should be lost. This is effected by boiling: a copper boiler should be used. Get up the fire & the thermometer indicates 170° or 178°. Then add sifted lime (quick) previously mixed with water, at the rate of 5 or 6 lbs. for every 100 gallons juice. Stir it well up, and skim the liquor. Heat it till the thermometer reaches 200°. Add sulphuric acid in small portions, diluted with six times its bulk of water, to neutralise the effect of the lime, stirring it briskly each time. The proper quantity is ascertained by carefully examining the juice every time the acid is added, with a drop of syrup of violet on a spoon, which ought to turn of a green colour. About 30 oz. of the acid to every 100 gallons of juice will be necessary. This done, the juice is quenched, and the boiler left to settle for half an hour; at the end of that time, the liquor is drawn off: by some, bullock's blood is added when the temperature of the juice reaches 190°, in the proportion of 2½ pints to

20 gallons of juice. Some, too, apply the sulphuric acid to the juice when cold, instead of hot, viz. before the boiler-fire is lighted; and one recommends its being applied to the pulp before it goes into the boiler: but all this practice will decide.

“Concentration. — The next process is concentration of the juice, which means nothing more than evaporating from it the water therein contained. This is effected by flat pans, over a brisk fire, but not so as to burn the syrup, which is the great danger in this operation. When reduced in pan 1 from 4 to 2 in. or so in depth, it is put into a smaller pan (2), and reduced to the same depth, and afterwards into a third pan. These three removals are the work of an hour and a half. If the syrup rises, and threatens to overflow the pan, put in a small lump of butter, which will make it subside.

“Clarification. — This is the next operation, and may be carried on in one of the pans used for concentration. Animal charcoal (some have even used wood charcoal) is now applied, at the rate of half a pound for every gallon of syrup, which renders it perfectly black and muddy. In this state, add blood mixed with water (stirred up well with the syrup), in the proportion of about 1½ pt. of blood to every 20 gals. of syrup.

“Boil it a short time, after which it is filtered, and then boiled again, care being taken not to burn the pan. Great care is necessary in examining the state of the syrup from time to time. The thermometer ought to stand as high as 234°; on attaining which, the pan should be emptied: 18 gals. of syrup will be reduced, by boiling, to 11 gals. The syrup is next cooled in a suitable vessel to 182° or 190°; and then run into moulds, but the cooling is very gradual. The pan is covered, and the heat kept in by closing the edges with flannel. The syrup is then poured into large earthen moulds, cone-shaped, and with a hole at bottom, through which the molasses drains. This hole is temporarily stopped till the mould is full. A mould contains 10 or 12 gals., and requires a month to purge itself. As it cools, it crystallises. The syrup, whilst filling, is at 67° to 77°; but, in the course of purging, it is raised to 120° and even 145°, which expedites the flow of the molasses. Our next process is *turning the moulds*, i. e. setting the cones on their bases, and taking them out of the moulds. The point of the cone is moist and syrupy: this is cut off, and boiled over again with the molasses. Thus far the process of making brown sugar: refining is a different business, and one which there is no occasion to particularise here. You will observe that copper utensils are preferred to those of iron, the latter having a chemical effect on the sugar.

“I have thus endeavoured to present you with the leading features of the system of sugar-making adopted in France, though I am aware that much yet remains to be told on this interesting subject. In fact, the experience of every year keeps adding to the general stock of knowledge thereon; and one main source of improvement consists in the application of steam to the evaporating process. However, as this would be of no use to cottagers, I have confined myself entirely to the plain common method by open fires.

“From what has been said, you will perceive that the process is neither very easy nor very simple. On the contrary, it requires great attention and accurate discrimination. Still, I am of opinion that a clever intelligent cottager, even without the aid of chemistry, may succeed in making sugar for his own use, albeit not of the very first quality. — *Samuel Taylor, jun. London, 139. Fleet Street, Feb. 25. 1830.*”

Cider, Perry, Wines, and Spirits. — No labourer who has a clever, cleanly, industrious wife need be without these drinks, provided he has land enough to grow two or three standard apples, as many standard pears, gooseberries, currants, elder-berries, and mountain-ash berries. South of York we should add vines, perhaps Miller's Burgundy and the common Muscadine; but, north of the Trent, we should prefer covering the walls and roof of the cottage with apple trees or currants. In choosing the standard apples and

pears for a cottager's garden, trees should be preferred which grow in narrow, conical, erect forms, in order that they may shade the crops below as little as possible, and the fruits of which are small in size, in order that they may not be easily blown down with the wind. Apples, suitable for this purpose, Mr. Ronalds of Brentford states to be, the Manks Codlin, Red Quarrenden, Franklin's Golden Pippin, Striped Juneating, New Cluster, Golden Pippin, King of the Pippins, Little Beauty, Pomegranate Pippin, Royal Pearmain, Cockle Pippin, Kerry Pippin, New Lemon Pippin, and Carlisle Codlin. Pears possessing similar qualities are, the Royal Bergamot, Yellow Beurrée, Red Catherine, Hampden's Bergamot, Red Auchan, Ashton Town, Bishop's Thumb, Summer Portugal, Green Pear of Yair. The best sorts of gooseberries for the cottager are, in like manner, those which have upright shoots, and in which the bushes assume narrow conical forms; such as the Ironmonger, Warrington, and Manchester, Reds; the Bright Venus, Beaumont's Smiling Beauty, Broadman's Transparent, Cheshire Lass, Whites; Rumbullion, Golden Drop, Golden Eagle, Cayton's Venerable, Goldsmith, Yellows; and Green Donington, Warnman's Ocean, Parkinson's Laurel, Perring's Evergreen, Biggs's Independent, Early Green Hairy, Greens.

Of red, white, and black currants, there scarcely can be said to be more than one sort of each. The Orleans, the Mussel, the Winesour, and the Damson are among the most useful plums for baking, and are easily preserved; and the leaves of the damson form as good an imitation of black tea as those of the common sloe. The Green Gage and Orleans are two of the best cottage table plums.

Hedges for Cottage-Gardens. — In many parts of the country, all the plums, and even all the apples and pears, which a cottager could require for drink-making and culinary purposes, might be grown in his ring-fence; by allowing the plants to attain their natural height, and by trimming the sides of the fence to the height of 7 or 8 ft., allowing the shoots above that height to spread out, either inwards only, or on both sides, according to the nature of the adjoining surface. We have seen such hedges in Worcestershire and in different parts of the Netherlands and Germany, 30 ft. high, 3 ft. wide at the bottom, 2 ft. wide at the height of 8 ft., the space between forming an impenetrable fence, and 20 ft. wide immediately above. Where, from the nature of the soil or climate, neither the apple, pear, nor plum, will make hedges of this description, the sloethorn may be employed, the fruit of which may be used for all the purposes of the damson; and, bruised and fermented, makes excellent wine; or fermented with the stones broken and the kernels bruised, and then distilled, it affords a brandy much used in Hungary, and, as we can affirm from experience, of an excellent flavour. In good soil, the sloe will grow 30 ft. high. The whitethorn should never be planted as a fence to the cottager's garden when the blackthorn can be got: the latter forms as good a fence, and has only one objection, an objection common to all the genus *Prunus*, that of being prolific in suckers; these, of course, the cottager must take care to remove. A sloe hedge once established, on the sheltered and warmest sides of it different varieties of plums may be grafted; the more hardy kinds on the east and west aspects, and the better kinds on the south side of the northern boundary. A south wall, it is estimated, is equivalent to the removal of the trees which are trained against it 7° farther to the south; (*Perth Miscellany*, vol. i. p. 42.) if we take the effects of the south side of a hedge as equivalent to one third of the effects of a south wall, we shall find no situation in Britain or Ireland in which the cottager may not grow apples, pears, plums, and cherries. The principle is to form the hedge of a double row of wildings; and when it is grown 5 or 6 years, to cut down the inner row, and graft it with the cultivated varieties of the species; apples on a crab hedge, on hawthorns, or quinces; pears on wild pears, on hawthorns, mountain ash, or service; plums on sloes, and cherries on bird cherries or geans.

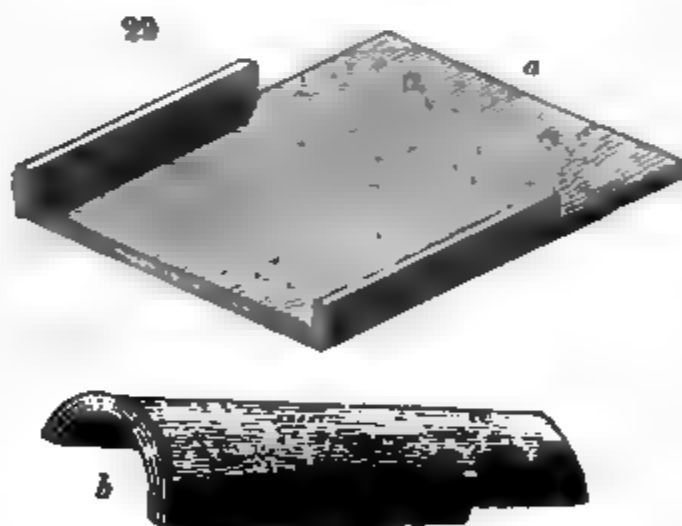
In this way, a considerable part of the advantages of a high wall would be obtained for the cottager's garden ; but, in grafting, he must take care that the scion receives the whole of the nourishment produced by the stock. For this purpose, a double row of plants would form much the most suitable hedge. Where a good fence of whitethorn already exists, rather than remove it and plant another of fruit trees, it may be worth while to cut down every third or fourth plant to the ground, and graft them with pears, apples, quinces, and medlars, all of which will grow on the common thorn ; the medlar more especially.

Tobacco. — Many cottagers, both male and female, smoke tobacco ; and we do not see why they should not, if it procures them any enjoyment, and does not annoy others. Tobacco, in decoction, is also one of the most universal and efficacious poisons for insects ; and the cottager ought to know, that, with a stock of tobacco which has been fermented in the manner of hay, and with quicklime for forming lime water, he may destroy every insect, worm, reptile, or fish, with which he can bring one or other of these articles in contact. Lime water, which is made by throwing a pint of quicklime, in powder, into 40 or 50 gallons of water, stirring the mixture well, and letting it stand half an hour to become clear, will destroy earth-worms, snails, frogs, lizards, snakes, and most kinds of caterpillars before they are fully grown. It will not, however, destroy the scaly insect, woolly insect, or red spider, on trees ; or the grub of the cockchaffer, or the wireworm (the grub of a species of *Typha*), in the soil : but for these a strong decoction of tobacco will be found effectual. Every cottager, therefore, ought to grow 30 or 40 plants of tobacco. He may sow the seed in a pot, and place it in the inside of the glass window of his cowhouse, where it will get heat from the cow, and light from the open air, in the beginning of April ; and transplant it into his richest soil, in a month afterwards. When the stem begins to show flower, or has thrown out five or six leaves, he may pinch out its centre bud ; this will increase the magnitude of the leaves, which may be gathered just before they begin to show symptoms of decay. The bottom leaves will be first ready, and there will be three gatherings in the season, each of which should be first slightly dried in the shade, and then put under a mat to be fermented in the manner of new hay. After having lain in this state for some weeks, it may be moistened with salt and water, rolled up into balls, and kept in a cool and rather moist place till wanted for use. In the north of Europe, where the common or round-leaved tobacco (*N. rustica*) is grown by every cottager for smoking, they do not take the trouble of fermenting it, but simply dry the leaves, and keep them in bundles in a dry place, till wanted for filling their pipes. We see no reason why a cottager should not manufacture both his tobacco and his snuff, and we shall hereafter give him copious directions for both.

Medicinal Plants. — Every cottager may grow two or three of these. The stalks of the medicinal rhubarb are as good for tarts as those of the species generally grown for that purpose ; and the roots of every species of rhubarb partake considerably of the medicinal properties of the officinal species. Chamomile may be grown on a seat, or on the slope of the platform on which, according to our plan, the cottage should stand. Opium is a most important medicine as a general alleviator of pain, and every cottager may produce it either from the common lettuce or the garden poppy. As a substitute for the cinchona, the *Acorus Calamus* may be grown. But to enter into details of matters of comparatively secondary importance to the cottager would exceed our limits.

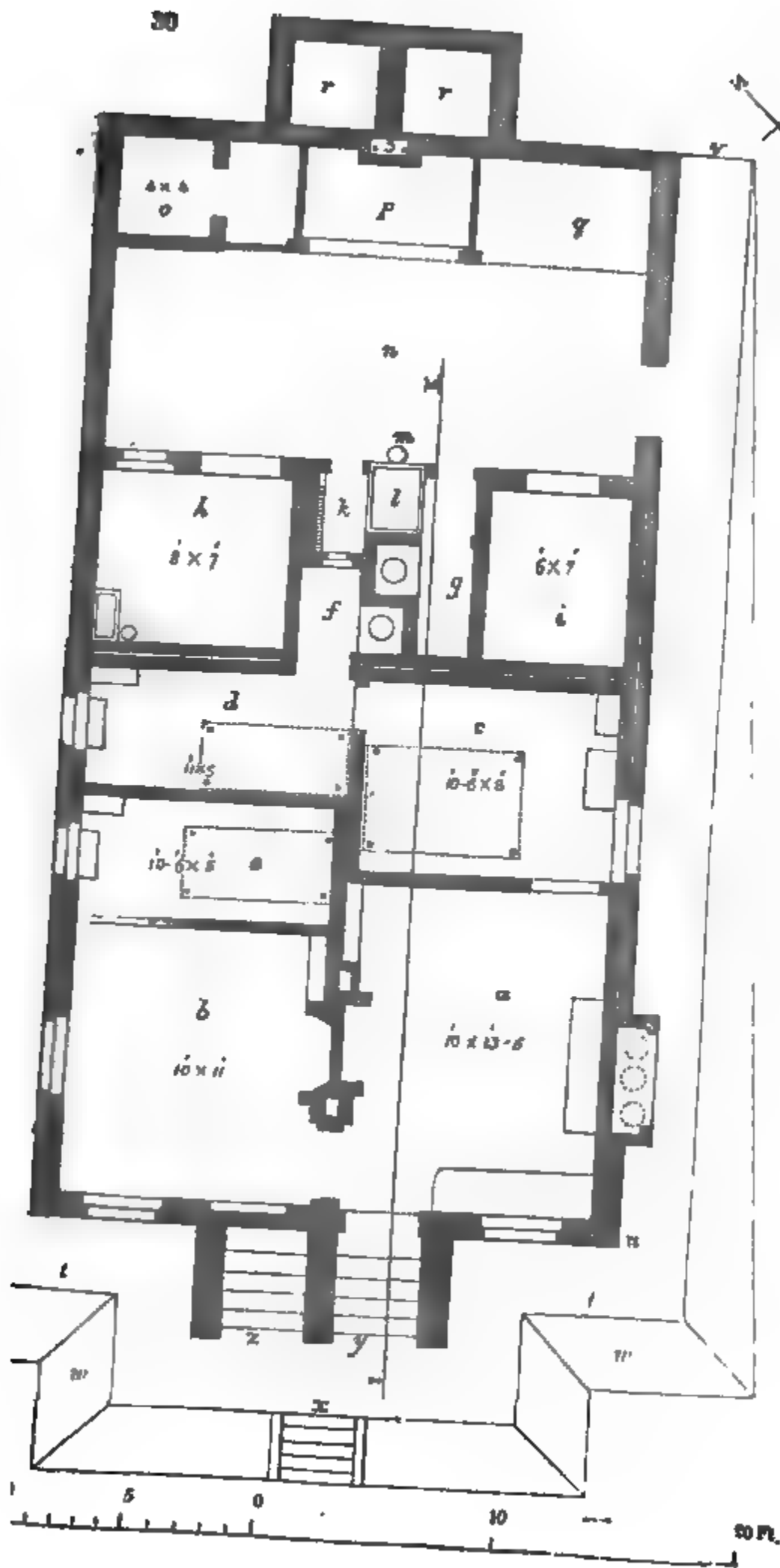
A Model Cottage for a Country Labourer. (*figs. 30. to 40.*) — We propose that, in all cases, cottages should stand on platforms of earth raised from 2 to 4 ft. above the natural surface ; that the minimum accommodation should be a kitchen, back-kitchen or wash-house, parlour, bedroom for the man and wife, one for girls, and one for boys. These accommodations may

either be arranged on one floor, as in *fig. 30.*, or on two floors as in *fig. 33.* The offices or outdoor appendages we propose, in either case, to be, a cow-house, wood-house, tool-house, pigsty, dungpit, faggot-shed, and tanks for liquid manure. The external form of the plan of the house we propose in all cases to be the square, as containing the greatest accommodation with the least quantity of walling, and as best calculated for accumulating and retaining heat. We would place this square so as that a south and north line would form its diagonal, or nearly so; by which means the four sides of the walls and roof would receive the sun's rays every day in the year. We would always, if possible, place the out-offices on the north-west side of the square, and the entrance on the south-east side; but the entrance, by means of a porch, and by placing the door of the porch on either of the sides or the front, according to circumstances, may be made from any side, so as to accord with the road or street, or other houses to which the cottage may be considered as belonging, and exactly the same internal accommodations retained; the out-offices also may be placed on any side at pleasure. The dairy should always be placed on the north-west or north-east side. The materials of the walls of this cottage we have shown in the plan as brick, and the walls themselves as built with a vacuity in the centre of each. This we propose to be done in common brickwork, by keeping the width of the wall at 11 in., working the outside fair (even); and, on the inside, keeping the headers or cross bricks 2 in. within the line of the stretching or lengthway bricks, and keeping these lengthway bricks 2 in. apart along the centre of the wall. Walls built in this way are much handsomer on the fair side; at least equally strong with solid walls; always dry, and less easily penetrated by the cold in winter or the heat in summer. The inner surface being uneven, is peculiarly favourable for receiving and retaining the plaster. Hollow cottage walls may also be built by placing the bricks, both headers and stretchers, on edge, as practised by Mr. Silverlock of Chichester, and exemplified in several cottages built by Mr. Donald at Woking. They may be also built with bricks halved lengthways, by cutting with a wire before burning, as recommended by Mr. Dearn. (*Hints on an improved Method of Building, &c.* London, 8vo, 1831.) The roof may be covered with tiles, slates, thatch, &c., at pleasure; we



should recommend a description of tile recently manufactured at our request by Mr. Peake of the Tunstall Potteries, Newcastle under Lyne. It consists of a flat tile, with the side edges turned up (*fig. 29. a*), and a semi-cylindrical tile for covering the edges (*b*). These tiles are much in use in Tuscany, and form a very handsome roof, which may be tolerably flat, and yet perfectly water-tight, as in the elevation of the cottage *fig. 40.*

In countries where stone is cheaper than brick, that material may be used for the walls, building them at least double the thickness, and adding that thickness to the outside, as the dimensions of the apartments are already so small as not to admit of any reduction. The walls may also be built of compressed lumps of earth, or in the *pisé* manner, or in the Cambridgeshire or West of England method of building mud walls. The latter is shortly described by Mr. Denson, in *A Peasant's Fare, &c.* p. 28.



Figs. 30 to 40. *Plans, sections, and elevations in perspective, of a cottage with the requisite accommodations for a labourer and four children, on one floor; and for a cow, pigs, ducks, hens, pigeons, and bees, in the out-offices.*

Fig. 30. *a*, The kitchen or living-room; the floor of tiles, or paved; in the ceiling, nearly over the hearth, a trap-door to the loft, which, in summer, may be partially opened to promote ventilation, there being a false flue in the chimney for that purpose, which will hereafter be described.

b, A small parlour, with a fire-place and boarded floor; as it will receive a good deal of heat from the kitchen fire, it will seldom require a fire made on purpose for it. It ought to have a small ventilator in the ceiling, near the stack of chimneys, communicating with the false or air flue, for summer use.

c, Family bedroom; the floor of tiles, or paved, of the same material as that of the kitchen.

d, Bedroom for girls; the floor boarded.

e, Bedroom for boys; the floor boarded. There may be a door in the partition between these small rooms, which it may be convenient in some cases to use instead of the door between the girls' bedroom and the family bedroom.

f, Water-closet for the mother, girls, and females, supplied by water as to be hereafter described.

The basin may be of brown earthenware or of cast iron, so as to cost very little; the door ought to open inwards, and the small window outwards, so that every movement of the door may act as a ventilator. The basins of both-closets communicate with an earthen pipe, which empties itself into the reservoir of the cesspools for liquid manure. The liquid manure thus gained will be of so much value to the garden, as alone, independently of cleanliness and decency, to justify the expense of two closets, and both of these water-closets.

g, Tool-house, and man and boys' water-closet, with an opening to the loft for ventilation: supplied with water from the same source as the other water-closet.

h, Cowhouse, with a post and trough for food in one corner, and a loft for hay and straw over; this loft may be got at through a trap-door, by the use of a common ladder.

i, House for fuel, lumber, or for various other purposes, such as roots or other food for the cow and pigs. In cases where the cottager grows corn, it may be made his barn; and if it were desired to have this barn larger, it could easily be made so, by projecting the whole lean-to 2 or 3 ft. farther from the main body of the house.

k, Place for ducks or geese, with a small poultry-stair or ladder to hen-loft over *f* and *g*. This loft ought to be lined with straw on the top and sides, in order to keep the poultry warm in winter and cool in summer.

l, Cistern for receiving half of the water which falls on the roof.

Considering it to be desirable that every cottager should be perfectly independent in respect of water, and also that rain-water is the purest of all water, we propose, in every case, to collect the water which falls on his dwelling; to filter and preserve one part of it, in a tank, for cookery purposes; and to preserve the other part unfiltered, in this cistern and in a large tank below it, for the purposes of the water-closets *f* and *g*, for the use of the cow and pigs, washing and cleaning, and the garden. It is calculated by Waistell that the average quantity of water which falls on a square yard of surface in Britain, in a year, is 126 gallons, which for this building, containing upwards of 100 square yards of roof, will give 12,600 gallons; an ample quantity for the purposes mentioned. A cottage constructed on this principle, therefore, may be set down in any situation, without reference to a natural supply of water. The cistern *l* may be of cast-iron; or of five slabs grooved into each other, and made water-tight with Roman cement; or of five plates of Welsh slate, or of 24 large flat paving tiles set in cement; or it may be made of wood, plastered inside with cement, or of bricks set in cement, and plastered within with the same material; or it may be simply an old cask. However constructed, it must have a waste-pipe, which, when the cistern is full, will flow over into the tank or well below, shown in *fig* 33. This well or tank is to be considered as the grand reservoir of the premises; and if there should be a natural spring in it, so much the better. Should the culinary or filtering tank fail at any time, water may be drawn from this tank, and introduced into the filtering tank.

m, A pump, which ought to be one of Siebe's rotatory pumps (*Gard-Mag.*, vol. v. p. 545.), and arranged so that, in addition to the common uses of a pump, the water can at pleasure be raised from the tank below into the cistern above. Siebe's pump is particularly adapted for this purpose: it costs no more than a common pump, and is much less likely to go out of order.

n, The open yard, which should have a gentle inclination from all sides towards the dungpit (*p*).

o, Pigsty, with a rubbing-post in the open area or feeding-place.

Two old barrels, for pigs' food, will require to be placed under cover; and where they can be kept from freezing in winter, and from being extremely hot in summer. One of these ought to be filling while the other is emptying, and the contents should not be made use of before fermentation has commenced (see p. 171.). The fuel-house (*d*) will be a very good situation for these tubs in summer, and a corner of the cow-house (*h*) in winter.

q, Shed for faggot-wood. *o*, *p*, and *q*, may be roofed with one lean-to or pavilion roof of uniform height and width; or if corn is grown by the cottager, then, instead of a roof of slates, tiles, &c., may be substituted a floor of joists of the same width as required for the roof; and on this floor may be laid, first, a layer of faggots, and on these built the corn or hay as a stack or stacks, and thatched in the usual manner. This would save the expense of tiles or slates, and also the ground that would otherwise be requisite as a rick-stand.

rr, Two cesspools for liquid manure, i. e. for all the drainings of the open yard after they have passed through the dungpit (*p*), for the water of the two closets, and from the sink to be described under *fig. 31. (r)*, including soap-suds and all waste or foul water made on the premises.

As it is found advantageous that this liquid manure should undergo fermentation, no less than pigs' food, before it is used, two cesspools become necessary, and also an arrangement by which the supplies from the different sources can be turned into either cesspool at pleasure. This is to be effected by the plug-hole *s*, 3 ft. deep, the sides of which are built of brick or stone, and the bottom formed of one stone containing two holes, each 3 in. diameter; the left-hand hole communicating with the left-hand cesspool, and the right-hand with the other. A plug, with a handle 4 or 5 ft. long, is to be used for stopping the communication with the cesspool which is filled or undergoing fermentation; and as these pools are alternately filled and emptied, the plug can be removed from the one hole in the regulating well to the other. These pools are placed without the open yard, in the supposed garden, for the greater convenience of emptying them.

The platform on which the house stands, or appears to stand, and which will be better understood by referring to *figs. 36. and 40.*, is level on the entrance front (*tt*), and on the other fronts or sides it forms inclined planes, for the sake of easy ascent and descent to the out-offices or to the garden: the inclined plane commences at *u* and ends at *v*.

The platform is 5 ft. broad, and includes a border of 1 ft. for wall trees and flowers next the house, and a margin of 1 ft., which should be of turf on the outer edge, leaving a walk between of 3 ft., which ought to be gravelled. The exterior sides of the platform (*w*) may have different degrees of slope, according to the nature of the soil and the culture or application of the platform. For a loamy soil, where the platform is to be covered with turf, with a furze or a box hedge about 2 ft. high along its upper angle, the slope may be 45°; where a loamy soil is to be cultivated as a flower-border, the slope may be from 30° to 35°; a sandy soil should have a still greater slope. Where stones are abundant, the slope may be formed into rockwork, with a small hedge at top, or a dwarf wall, or a row of rough stones. Along the upper edge of the slope, in the line of the small hedge, we should recommend, in almost every case, some standard fruit trees to be planted; in order that their roots might bring into use the soil accumulated in the platform, and their tops the vacant space, speaking with reference to vegetation, over the roof of the house. In some situations, it might be worth while to form a rough trellis over the roof, and at about a foot above the roof, and on this trellis to train either apples, pears, plums, or vines; in severe climates, ivy, for the sake of retaining heat in winter. On the side walls of the cottage we would have fruit trees or vines, together with ever-flowering roses, honeysuckles, clematis, white and yellow (*J. fruticans*) jasmine, *Chimonanthus fragrans*, and *Wistaria Consequana*.

The platform may be ascended from the garden, either by the inclined plane (*uv*) leading to the out-offices; by a similar inclined plane directly in front; or by steps (*y*). The descent to the cellar is by 6 or 7 steps (*z*).

The platform may be ascended from the garden, either by the inclined plane (*uv*) leading to the out-offices; by a similar inclined plane directly in front; or by steps (*y*). The descent to the cellar is by 6 or 7 steps (*z*).

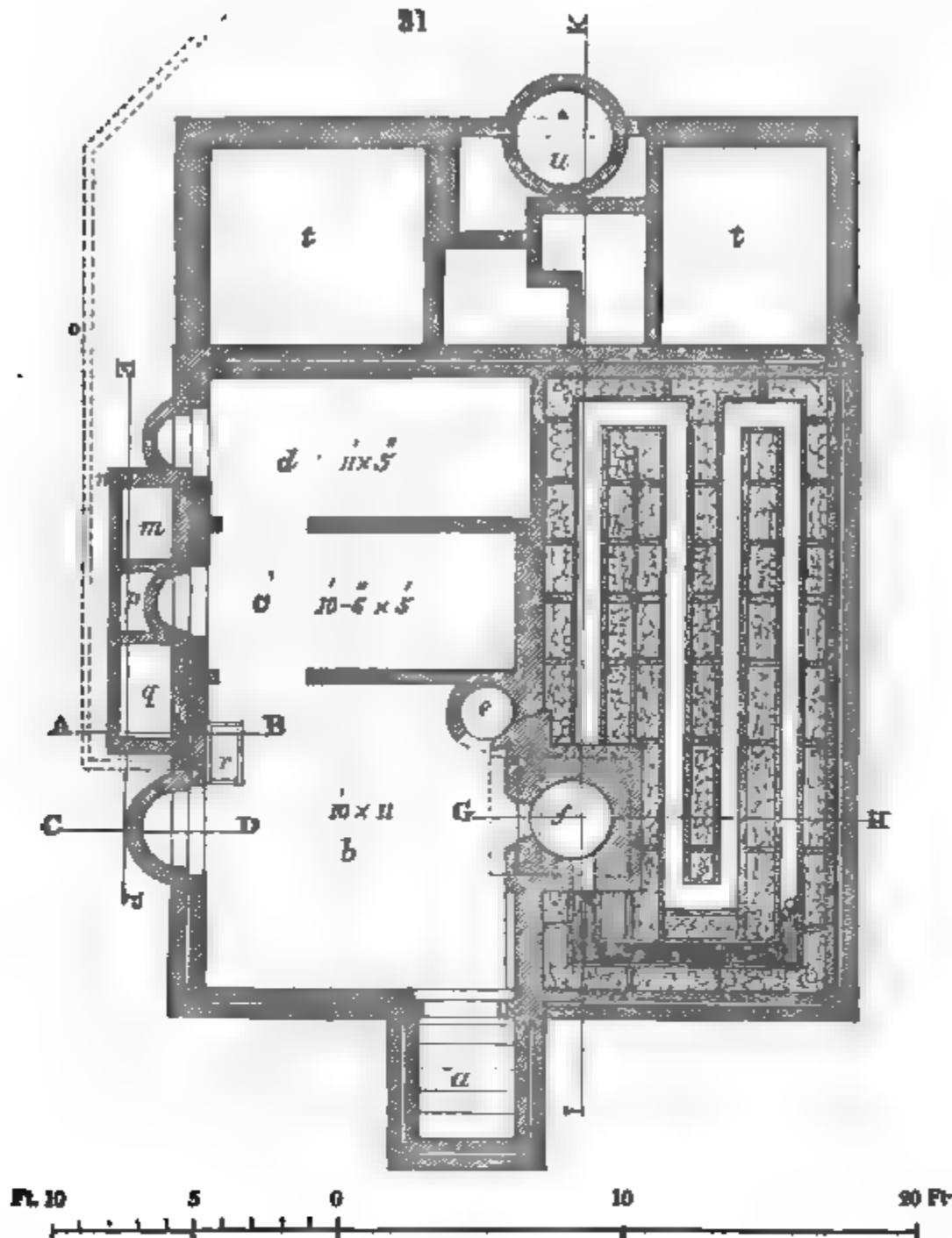
Fig. 31. Plan of the Cellar Floor, Heating Flue, and Foundations.

a, Steps of descent. If the front of such a porch were to any other quarter than the south-east, the porch should be larger with an exterior door; if it fronted the south-west, the entrance to the porch ought to be on its south side, for the sake of protection from the weather.

b, Apartment serving as a back-kitchen, wash-house, brew-house, bake house, &c., as well as for boiling or scalding food for the cow, pigs, and poultry.

c, Store cellar for potatoes, beer, home-made wines, salt meat, and similar articles of permanent provision.

d, Milk-house and pantry; in the farther corner in the ceiling ought to be a small grated opening, communicating with the vacuity in the wall, to promote ventilation; the exterior window ought to be of wire or hair cloth, which both excludes air and heat or cold.



e, Copper for brewing, washing, &c., unless a copper pot or iron box is fixed over the oven, when a separate copper becomes unnecessary.

f, Oven for baking, and also for heating the floor of the living-room and family bedroom.

The courses of this flue are so contrived that the covers, supposing them to be one-foot tiles, will form the floor of the two rooms which it heats. The flues may be of any convenient depth exceeding 18 in., their sides built of brick on edge not plastered, and the intervals between the flues filled up with loose stones or rough gravel. If the flues are made deep, which in some cases may be found cheaper than preparing a raised solid basis on which to build shallow flues, then the side walls may be tied together by brick-on-edge work (h), and the foundation of the partition wall, which separates the family bedroom from the kitchen will contribute to the same end. To equalize the heat given out by the flue, and to prevent the kitchen floor from being too hot where the flue proceeds from the oven, a double covering is there shown, with a vacuity of 6 in. between the under cover and the floor, from the oven f to g; a section of which may be seen in fig. 32. at g.

As faggots are intended to be burnt in the oven, the soot produced will be very trifling, but the flues may be cleaned once a year by taking up a tile at each end of the different courses of the flue. A little reflection will convince any one of the immense superiority of this mode of heating the air of a room over any other whatever. By open fire-places, by stoves, steam-pipes, or water-pipes, unless indeed these are in the floor, and, by heated air, the coldest stratum of air is always found immediately on the floor, where, for the sake of the feet and legs, the air ought to be hottest; by the method of under-ground flues the lowest stratum is necessarily the hottest, which must be preferable for the feet and legs of grown persons, and for the whole bodies of little children. The heat being diffused over the whole surface of the floor, must contribute greatly to the equality of the temperature throughout the apartment, and the mass of loose stones will continue

to give out heat for a day or two, according to the season of the year, after every time that the oven is heated. The heat from the hear, in its ascent to the roof, will warm whatever it meets with, but this is not the case with either raised stoves or open fires. In heating by open fires or common stoves, the heat ascends directly to the ceiling, and is there in a great measure wasted as far as it respects the bodies of the persons in the apartment, but by this mode the ceiling will not in general be hotter than the floor. Except when there is a fire in the oven, its door must be kept perfectly close, and a damper in the upright flue, to be afterwards mentioned, nearly on.

Over the oven, and as a cover to it, instead of brickwork, might be placed, or built in, a cast-iron tank or iron pot for heating water, as shown by the dotted lines in the plan *fig. 31*, and by *b* in *fig. 32*. The upper surface of this tank or pot might form a part of the kitchen floor, as in *fig. 30*, and might have a properly secured flat lid on that side, to admit of putting in and taking out water, or the tank might be entirely built in masonry, as in *fig. 32*, and in that case a part of it should project from the wall into the back kitchen, and should have a lid to open, for the purpose of filling and cleaning out, and a cock (*c*) for the purpose of drawing off the water. If this tank were 6 ft. or 8 ft. square, and 9 in. or 10 in. deep, it would supersede the necessity of the copper (*fig. 31* *c*), and in summer, when the heat of the fire was not wanted, a damper withdrawn would admit the smoke to ascend directly to the chimney top.

A family with a pot or tank of this kind over their oven, the tank or pot either opening only from the kitchen above, or both from above and from the back kitchen, would, throughout the year, scarcely require any other fire than what was made in the oven; all their roasting and baking would be done in the oven, and all their boiling in the pot or tank over it. As it might not be always convenient or desirable to boil the large tank or pot full of water, there might be a well of 6 in. diameter and 9 in. deep cut in its bottom, and the small quantity of water which this well could contain would be boiled with very little fuel, for tea, or any similar purpose, a tin jug of water might be set in among the water in the well, which would keep the former perfectly pure. A very small quantity of fuel consumed in such an oven will have a powerful effect in heating the water above it, from the difficulty of the heat escaping by the sides. Water might easily be drawn out of this well, or out of the tank or pot when in common use, from the upper kitchen, without stamping, by a siphon (*Gard. Mag.*, vol. v. p. 616, with a long handle. One half of the water which fills on the roof of the building, we have before stated, is proposed to be conducted into the cistern (*d*), for general purposes, the remaining half we propose to conduct into a tank, thence to pass through a filtering stratum into a reservoir, for culinary use.

m, The receiving tank, which, in addition to the pipe from the roof, has another pipe from the waste with a funnel, into which to pour a supply for filtration, from the pump (*fig. 30. m*), in times of great drought, or at any time when the culinary reservoir was exhausted.

n, Waste pipe from this tank, communicating with the drain pipe.

o, Drain pipe, communicating with the well of the cesspools. (*see fig. 30.*)

p, Filtering tank, consisting of sand and charcoal, placed on a bottom raised 4 in. from the bottom of the receiving tank.

The floor, including the false bottom of slate pierced with holes, and the top a thin plate of sheeting brass, is 1 ft. in thickness, the water ascends through it, and then runs off into the reserve tank, so that the operation of filtering cannot go on unless there is a depth of at least 1 ft. 6 in. of water in the receiving tank. There is a large cock or hole, stopped with a plug, near the bottom of the receiving tank, by opening which, when the reserve tank is full, the filtered water will flow backwards through the floor, and thus free it from impurities. There are several advantages attending this arrangement, which we shall not stop at present to point out.

q, Receiving tank for the filtered water, communicating by a cock with the sink *r*, and the sink having a stink-trap (of which there is a cheap and excellent sort in earthenware, by Penke of Tunstall), connected with a waste pipe *s*, which joins the drain pipe *o*.

t, Foundations of the outbuildings, shown in *fig. 30.* by *f g h i k l* and *m*.

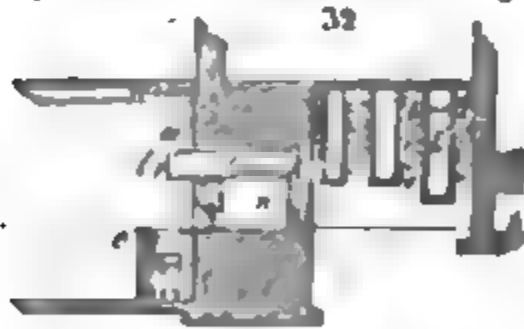


Fig. 32. Section on the line *u v* of *Fig. 30.*

g, Natural surface of the ground.
h, Surface of the platform.
i, Level of the foundations of the cellar.
j, Foundations of the other walls.
k, Foundation of the oven.
l, Partition of the partition wall between the living-room and family bedroom.
m, Well or tank.

n, Natural surface of the ground.

o, Surface of the platform.

p, Level of the foundations of the cellar.

q, Foundations of the other walls.

r, Foundation of the oven.

s, Partition of the partition wall between the living-room and family bedroom.

t, Well or tank.

u, Tank, or well of water for general purposes, and for supplying the filtering tank in times of extraordinary drought.

Fig. 32. section on the line *u v* in *Fig. 31.* to show the depth of the flues; the double cover and vacuity between the covers at *g*; the cast-iron box of hot water, *k*; the cock for emptying it, *l*; the small lid for filling it, *m*; the oven, *n*; the copper, *o*; the natural surface of the ground, *q*.

Fig. 32. Section on the line *u v* of *Fig. 30.*

a, Natural surface of the ground.

b, Surface of the platform.

c, Level of the foundations of the cellar.

d, Foundations of the other walls.

e, Foundation of the oven.

f, Partition of the partition wall between the living-room and family bedroom.

g, Well or tank.

h, Natural surface of the ground.

i, Surface of the platform.

j, Level of the foundations of the cellar.

k, Foundations of the other walls.

l, Foundation of the oven.

m, Partition of the partition wall between the living-room and family bedroom.

n, Well or tank.

o, Natural surface of the ground.

p, Surface of the platform.

q, Level of the foundations of the cellar.

r, Foundations of the other walls.

s, Foundation of the oven.

t, Partition of the partition wall between the living-room and family bedroom.

u, Well or tank.

v, Natural surface of the ground.

w, Surface of the platform.

x, Level of the foundations of the cellar.

y, Foundations of the other walls.

z, Foundation of the oven.

aa, Partition of the partition wall between the living-room and family bedroom.

bb, Well or tank.

cc, Natural surface of the ground.

dd, Surface of the platform.

ee, Level of the foundations of the cellar.

ff, Foundations of the other walls.

gg, Foundation of the oven.

hh, Partition of the partition wall between the living-room and family bedroom.

ii, Well or tank.

jj, Natural surface of the ground.

kk, Surface of the platform.

ll, Level of the foundations of the cellar.

mm, Foundations of the other walls.

nn, Foundation of the oven.

oo, Partition of the partition wall between the living-room and family bedroom.

pp, Well or tank.

qq, Natural surface of the ground.

rr, Surface of the platform.

ss, Level of the foundations of the cellar.

tt, Foundations of the other walls.

uu, Foundation of the oven.

vv, Partition of the partition wall between the living-room and family bedroom.

ww, Well or tank.

xx, Natural surface of the ground.

yy, Surface of the platform.

zz, Level of the foundations of the cellar.

aaa, Foundations of the other walls.

bbb, Foundation of the oven.

ccc, Partition of the partition wall between the living-room and family bedroom.

ddd, Well or tank.

eee, Natural surface of the ground.

fff, Surface of the platform.

ggg, Level of the foundations of the cellar.

hhh, Foundations of the other walls.

iii, Foundation of the oven.

jjj, Partition of the partition wall between the living-room and family bedroom.

kkk, Well or tank.

lll, Natural surface of the ground.

mmm, Surface of the platform.

nnn, Level of the foundations of the cellar.

ooo, Foundations of the other walls.

ppp, Foundation of the oven.

qqq, Partition of the partition wall between the living-room and family bedroom.

rrr, Well or tank.

sss, Natural surface of the ground.

ttt, Surface of the platform.

uuu, Level of the foundations of the cellar.

vvv, Foundations of the other walls.

www, Foundation of the oven.

xxx, Partition of the partition wall between the living-room and family bedroom.

yyy, Well or tank.

zzz, Natural surface of the ground.

aaa, Surface of the platform.

bbb, Level of the foundations of the cellar.

ccc, Foundations of the other walls.

ddd, Foundation of the oven.

eee, Partition of the partition wall between the living-room and family bedroom.

fff, Well or tank.

ggg, Natural surface of the ground.

hhh, Surface of the platform.

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kkk, Level of the foundations of the cellar.

lll, Foundations of the other walls.

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sss, Foundations of the other walls.

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uuu, Partition of the partition wall between the living-room and family bedroom.

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eee, Foundation of the oven.

fff, Partition of the partition wall between the living-room and family bedroom.

ggg, Well or tank.

hhh, Natural surface of the ground.

iii, Surface of the platform.

jjj, Level of the foundations of the cellar.

kkk, Foundations of the other walls.

lll, Foundation of the oven.

mmm, Partition of the partition wall between the living-room and family bedroom.

nnn, Well or tank.

kitchen, and opening near the false or ventilating flue.

a, Kitchen.

p, Porch.

q, Cover to the false or air flue, which is only kept open during summer to prevent excessive heat at that season; it is simply a tile supported by an iron stalk, in order to exclude rain, instead of being entirely removed.

r, Oven.

s, Water-box over

t, Commencement of flue from oven.

u, Continuation of flue.

v, Cornice to chimney top, made large, for the purpose of encouraging swallows to build their nests there; these birds being of great importance as destroyers of winged insects, on which they live entirely.

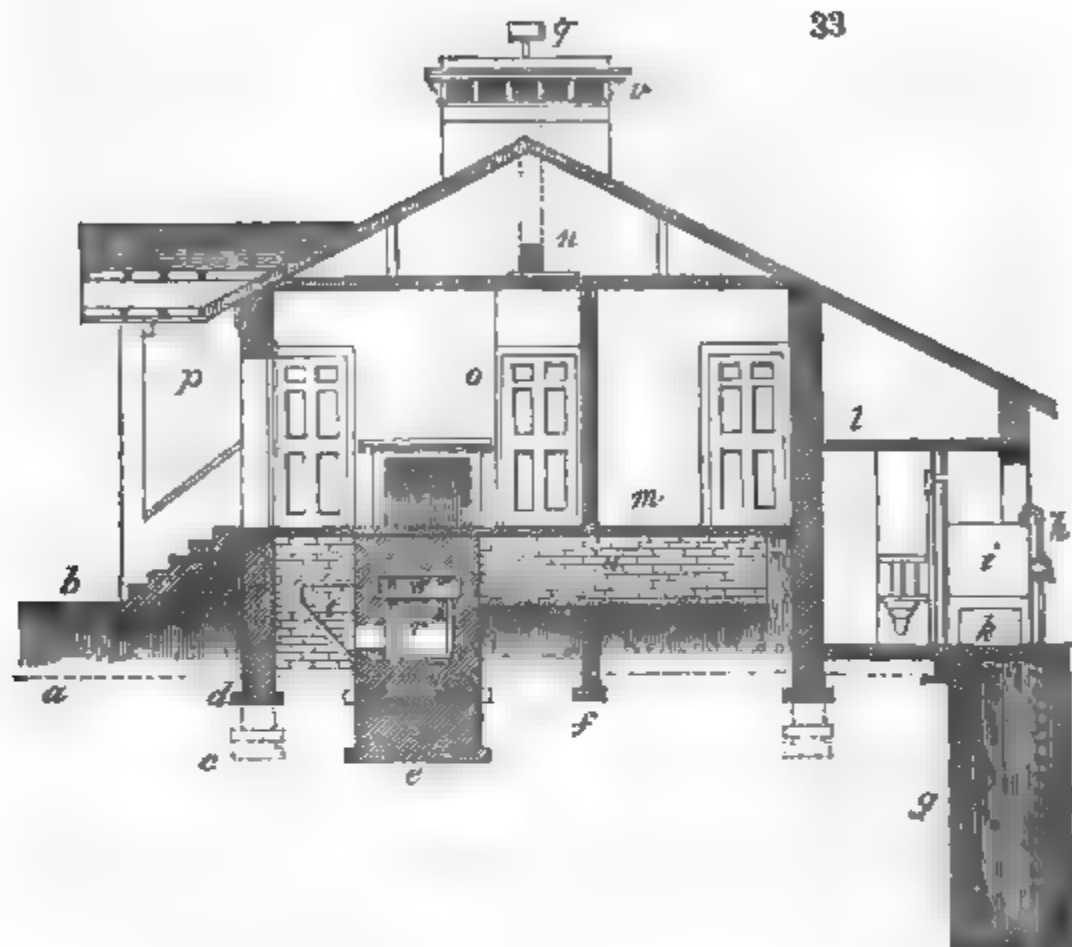
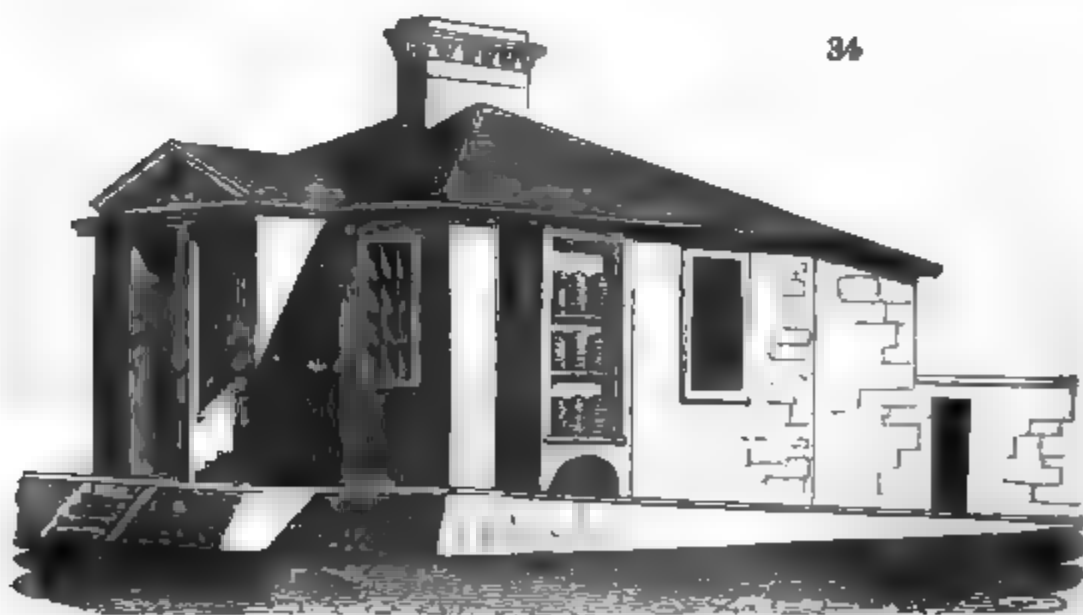


Fig. 10 5 0 10 20 Ft.

Fig. 34. Perspective elevation, in which is shown the ascent to the platform, the steps of the porch, the inclined plane; the bee-house, as a substitute



for a false window, a place for a dog under it, the pigeonry over the porch, and the door to the yard behind.

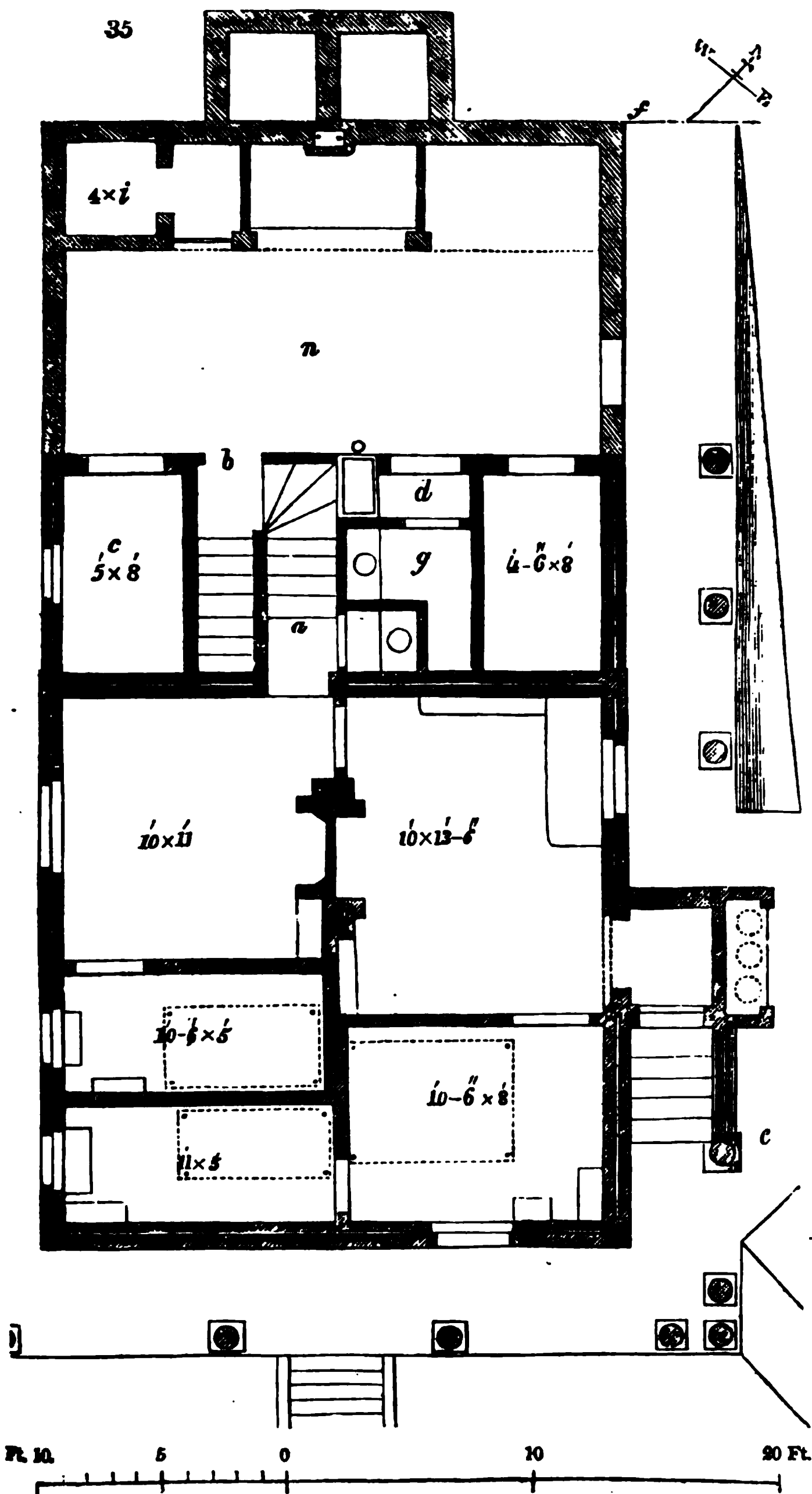
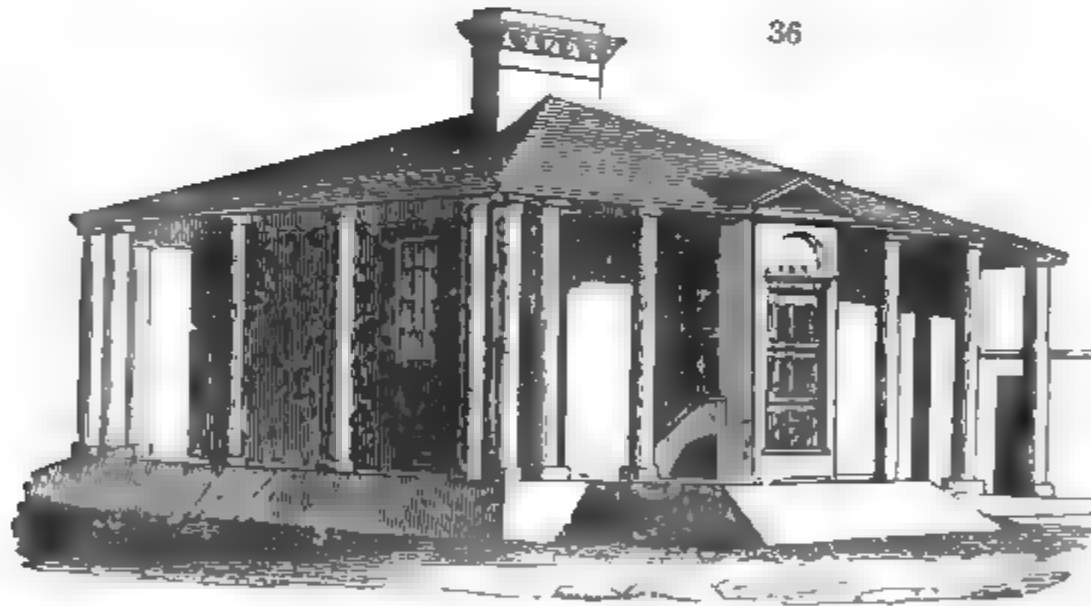


Fig. 35. *Plan of a Cottage with the same accommodations as the foregoing, but differently arranged, and with a veranda.* The difference in the aspect of this cottage will be ascertained by observing the compass; the north and south line being in the direction of from left to right, whereas in plan fig. 30. it is from right to left. The entrance, therefore, is placed against the north-east front, in order that, by placing the door on one side of the porch, it may open to the south-east. An interior arrangement is shown, which we consider preferable to that of fig. 30., because the communication with the cellar, by means of the stair (a) in the lean-to and the direct entrance to the yard (b), is more convenient. The size of the cowhouse (c), though somewhat diminished, is still large enough for a small cow; the space (d) for ducks or geese, and for a ladder to the hen-house, is not quite so commodious as in the other plan; but on the whole, notwithstanding these drawbacks, we consider this plan as more conveniently arranged than the preceding one.

Exteriorly the platform is level as far as the steps to the porch (e), and thence it forms an inclined plane to the natural surface.

f. The veranda, which is supported by trunks of larch or spruce fir trees, with the bark on, will add much to the comfort and economical uses of this residence. It will serve every year for drying kidneybeans, and other beans and peas in the straw; for hanging up Indian corn or tobacco, or any sorts of garden seeds or garden herbs which the cottager may wish to dry. In wet seasons he may dry the whole of his wheat, barley, oats, or even hay there; the family washing may be suspended on lines, and dried there in all weathers, as well as various sorts of work performed with comfort, and children sent out to play during rain or snow.

Fig. 36. *The perspective elevation shows the bee-house, with pigeon-house over, and a place for a dog or for rabbits, entering from beneath the steps to the porch.*

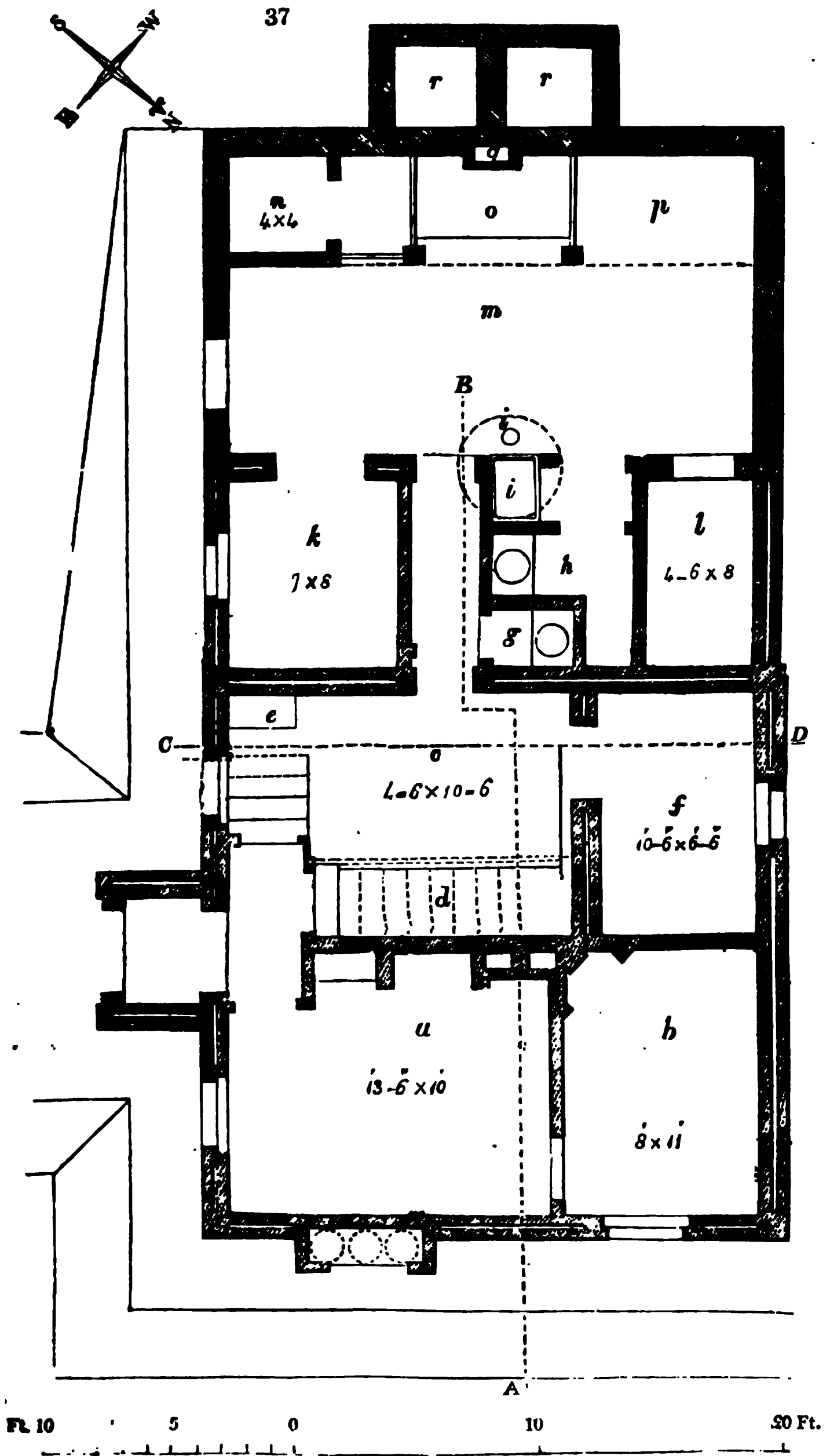


Figs. 37. to 40. *A design for a cottage, with the same general accommodations as figs. 30. and 35.; but without a cellar floor, and with the addition of a bedroom floor.*

Fig. 37. *Ground plan.*

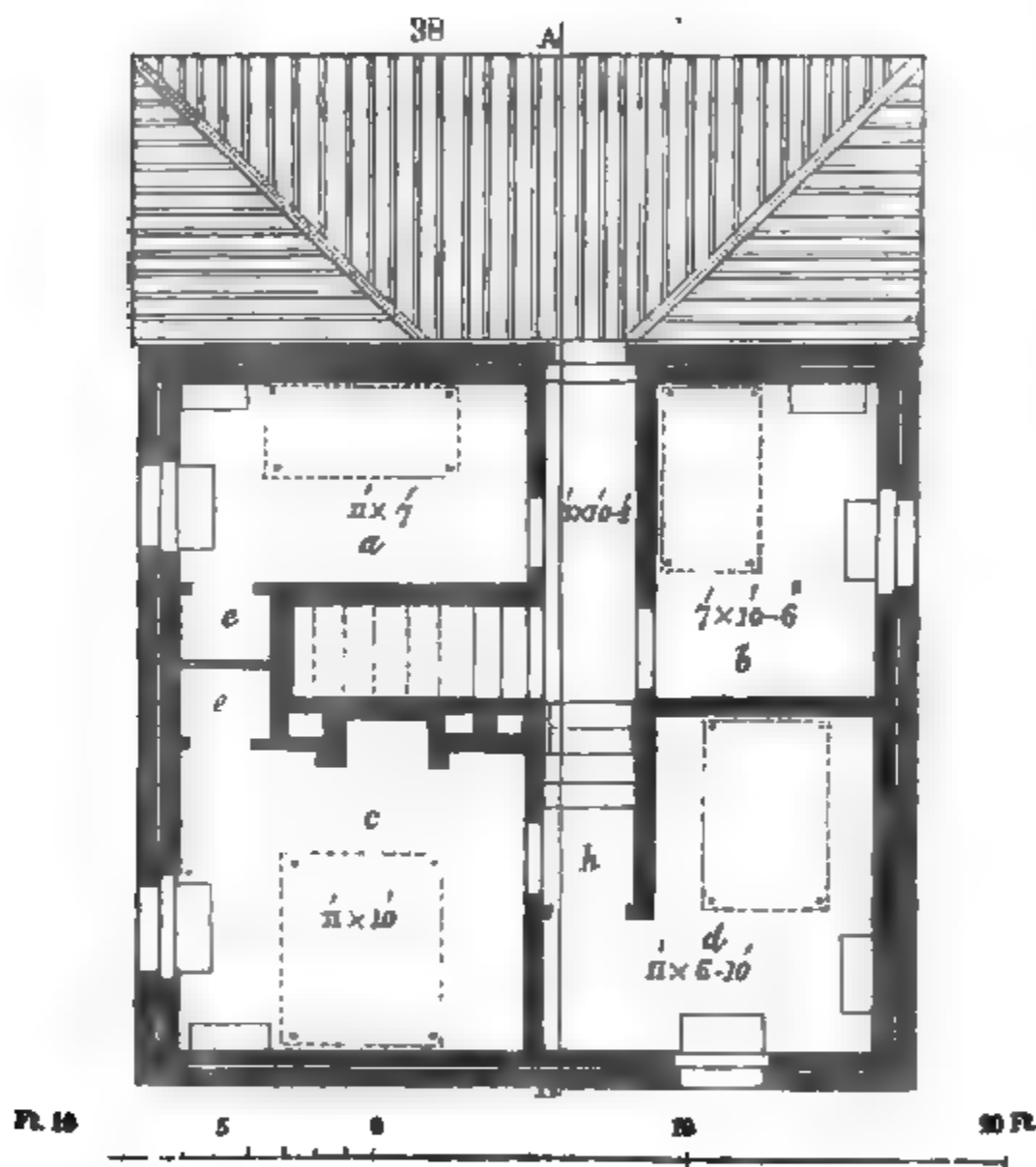
- a, Kitchen.
- b, Parlour.
- c, Back kitchen, the descent to which is by five steps.
- d, Stair to bedrooms, under which are the oven and boiler, the former with its flue under the kitchen and parlour floors, which are both paved with tiles or stone.
- e, Sink, supplied as in figs. 30. and 34., from a filtering tank.
- f, Dairy and pantry.
- g, Women's water-closet.

- h, Tool-house and men's water-closet.
- i, Cistern for water-closets, with tank or well under, and place for ducks and geese, and ladder to poultry-house at one side.
- k, Cowhouse.
- l, Wood, or other fuel.
- m, Open yard.
- n, Pigsty.
- o, Dung-pit.
- p, Faggot-shed.
- q, Well for regulating plug.
- r, r, Cesspools.



The platform is the same as in the other plans, the inclined plane beginning at *c*, and continuing to the extremity of the outbuildings.

Fig. 38. shows the bedroom floor, in which the bedrooms *a* and *b*, over the back kitchen and dairy, are on a lower level than the bedrooms *c* and *d*, over the kitchen and parlour. The positions of the different beds, chests of drawers, and dressing-tables, in the different rooms, are indicated, and the vacuity in the exterior wall is shown as in the ground plan.



e, Two closets.

This design is more particularly calculated for low, moist, shady, or confined situations, where it might not be considered advisable to sleep on the ground floor; it is of course somewhat more expensive in execution than either of the two preceding plans, and not quite so well adapted as they for walls built in the *pisé* manner.

Fig. 39. Section on the lines *A B* in figs. 37, 38, showing the level of the open yard, *a*; passage from the back kitchen, *b*; sunk area under the stair to give head-room for attending the oven, *c*; oven, *d*; water-box over it on a level with the kitchen floor, *e*; flues for heating the kitchen, *f*; platform, *g*; natural surface, *h*; lower bed-room, *i*; larger loft over, *k*; closet, *l*; situation of openings to the false flue for ventilation, *m n*; cornices for swallows, *o o*.

350*l.*; *figs.* 37. to 40. upwards of 400*l.* The same extensively employed gentleman informed us, that in Sussex these designs might be erected for less than half the above sums. A proprietor, with the materials on his own estate, whatever might be the part of the country in which that estate was situated, might erect the first two designs at little more than 100*l.*, and the third at less than 150*l.* Provided an industrious labourer could get a lease for a long period of years, or in perpetuity, at a moderate rent, he might erect an excellent cottage, with all the above accomodations, by cooperation or exchange, on one or other of the following plans:—

1. By contracting to exchange a part of the labour of his hours of recreation with the tradesmen requisite to assist him with labour. By entering into a similar contract with those proprietors or dealers, or with the parish to which he belongs, for timber and other materials, to be placed against a certain portion of his hours of labour; all the walls being formed of earth in the *pisé*e manner, or otherwise, by himself and another labourer, and by degrees, even if the time occupied should be two years. Labourers who so occupy themselves ought to have a magistrate's permission to do so on Sundays for a certain period.

2. Six persons, viz., a bricklayer or mason, a carpenter, a plasterer, and a slater or thatcher, and two labourers, might join together and construct such a cottage at their leisure hours and on Sundays; they might then either let it for rent, or sell it and divide the profits: or they may build six houses, and each occupy one; priority of occupation being determined by lot.

The great secrets, by which a labourer can obtain a cottage of this sort, are cooperation, and exchanging labour for labour, and labour also for materials. It is true this is rather a retrograde step in the progress of civilisation, but we apprehend it to be the most suitable one to the present circumstances of the labouring classes in Britain. The great difficulty, we are well aware, will be in getting land sufficiently cheap, and on a long lease. For our own part, we think there ought to be no leases for building shorter than for perpetuity; and justice and equity seem to us to require that the annual rent for land so let in perpetuity to be built on, should be less, rather than more, than the common rent of such land when used for ordinary purposes in its neighbourhood. We say less, because rent, where there is the security of a house for its being regularly paid, must eventually be a more certain annuity than a rent depending on the success of crops. We are here speaking of the reason of the thing, and with landlords in our eye, of moderation, joined to a little humanity, which, we have no doubt, always produces a policy which will be found best in the long run. We are well aware that in most cases the landlord accepts the offer of as high a rent as he is promised, and that the powerful natural desire of possessing land, often induces the poor man to promise more than he can pay. For our own part, we have no hesitation in saying, that, were we an active young labourer, gardener, or mechanic, without property, we should greatly prefer emigrating to America or Australia, where we could get land in perpetuity, to building here on any shorter lease.

Perhaps we may be asked why we have not given simpler and cheaper plans, such as might be built any where for 50*l.* or 60*l.*; our answer is, that for such cottages no plans are wanted; they may be seen every where. In England they can be built by any hedge carpenter, with the assistance of a labourer: in Scotland what is called a "decent cottage" consists of two apartments, a *butt* and a *ben*, with earthen floors and without ceilings; in Ireland a hole is dug in a dry bank on the side of a hill, and a roof of *rungs* and *turves* put over it. We have no wish to increase the number of such wretched habitations; we think labourers, as a part of the human family, deserve something better, and we wish to raise their taste, and give them some idea of the natural rights of man. There is abundance of land, of materials, and of labour, in Great Britain, for transforming every two-roomed hut into such cottages as we have described; and there can be no reason

why this, or something better, is not done, the root of which may not be traced to ignorance, and that depression of circumstances and want of personal comforts which preclude taste and the pride of appearances. We do not, therefore, expect much, till a generation arises sufficiently enlightened to know their natural rights, and sufficiently skilful and energetic to assert them, and to cooperate in such a way as to obtain them. All useful knowledge, and all useful food, lodging, and clothing, are surely destined to be common to all men.

ART. III. *On the Extent and Culture of Cottage Gardens with and without Cows, and on Brewing, Baking, and other Points of the Husbandry of the Cottager.* By a PRACTICAL GARDENER.

Sir,

IN attempting to digest a plan of cottage economy for a labouring man, its utility will chiefly depend on its simplicity. To accomplish this as well as I am able, I will arrange and consider the departments as they naturally occur in practice, beginning with the man himself, as the primary cause of enquiry, and proceeding in the following order, viz. : —

1. A Man, Wife, and Three or Four Children; Cottage and Garden; making Bread, and brewing Beer; Provision for a Pig; Hog-tubs; Sty, Cesspools, and Pig; Fowls and Ducks; Cultivation of the Garden.
2. A Man, Wife, and Seven to Eight or Ten Children; a Cow; Advantages of keeping a Cow; Ground necessary to keep one, and its Culture; Rabbits and Pigeons.

1. *A Man, Wife, and Three or Four Children.* — It would be a libel on human nature to suppose that any young man, about to enter the married state, is totally indifferent to the consequences likely to arise from a change of such magnitude. He *must* naturally expect a young family; and for this young family it is his imperative duty to make a provision. He must expect, likewise, that, year after year, the wants of this family will be continually increasing; and, consequently, demanding greater and greater sacrifices, with increasing exertions on his part; and that these sacrifices and exertions will be required of him, not merely for a short season, but for almost an unlimited, or, at least, an indefinite period. These weighty considerations, one would reasonably suppose, would induce any man of ordinary prudence to examine into his “ways and means;” and if his little stock of money is low, as is too frequently the case, let him immediately begin to hoard, week after week, with unremitting care, *every sixpence*; for, after all his care, he will still find great difficulty in answering the demands made upon his pocket by such an eventful change. He must provide a cottage, and furnish it; he must have a garden to produce vegetables for himself and family, with nearly as many more as will keep a pig. With these to make a beginning (and they ought to be considered indispensable), a poor man may, by great industry and good management (to teach him the latter is the object of these remarks), contrive to rear a family of three or four children, and live with his wife in comparative comfort and respectability. While, on the other hand, when a man is so unfortunate as to be drawn into a hasty and improvident marriage (and this is too frequently the case), his friends are probably displeased, and unwilling, or, what is more likely, unable, to assist him. Thus he is compelled, being penniless, to take up his abode with his wife’s relations, who are as poor as himself (save a little old furniture, of which he has the use); and here he thoughtlessly spends, year after year, his scanty earnings, without attempting to purchase the few little necessities to furnish a cottage for himself with, merely because

he is not in the immediate want of them, until his increasing family absorbs the whole. His wife's relations quarrel with him, or can no longer accommodate him; he applies to the overseer for a house or employment; is insulted and exposed before his neighbours; and soon, very soon, the same individual who would, in all probability, under more favourable circumstances, have become a useful member of society, now gradually becomes a careless, reckless, confirmed pauper; is pronounced "incorrigible" by the magistrates and parish officers; while he does not lack offensive epithets, nor the disposition to bestow them, upon those whom he only considers as enemies and oppressors. This melancholy, and, I fear, too true, picture, clearly shows how necessary, how essential, to the future happiness and well-doing in life it is, for a man to commence his matrimonial life with possessing himself of a decently furnished

Cottage and Garden. — With a cottage of at least two rooms; with a dairy, pantry, and a coal or wood house; and a garden of not less than 20 rods of ground adjoining; and with a clean industrious helpmate in his wife, a labouring man is a person of some consequence. He fills a station which, though humble, is yet important; because, from the moral or immoral conduct of him, and the class to which he belongs, much good or evil will ensue to society. He becomes, as it were, the first link of an ascending or descending chain of causes, which lead to moral rectitude or moral turpitude; for his actions will not only have a baneful or beneficial influence on his own immediate offspring ("as is the father so is the son"), but, through them, on society at large: and, if this view of the case were generally taken by the wealthy portion of the community, I think it would induce them to assist their humble neighbours, not only with their purses, in cases of emergency, but with their advice and countenance, when both may be required, as in the case of an improvident marriage. If distress and difficulties are allowed to accumulate around an individual so unfortunately circumstanced, it is idle to suppose that such a poor, deserted, despised creature, whose character none respects, will long continue to respect himself. Profligacy and dissipation ensue: his home becomes wretched; and, with a wretched home, a man has no motive to be industrious, save merely to obtain the means of dragging out his existence. Without a character, he has no motive to be honest but the fear of the tread-mill: therefore, a man, to be both honest and industrious, must have motives sufficiently influential to counterbalance any propensity to be otherwise; and *these motives will always be found in a comfortable clean home.* For it ought always to be kept in view by the rich, that a poor man's self-respect, his desire to improve his condition, to provide for and rear his family in a decent and creditable manner, all proceed from this simple fact, that he has *a comfortable home, a home which he loves.*

Let us, then, suppose a new-married couple in possession of a decently furnished cottage: the first resolution they will, or ought, to come to, will be to live within their income; and, for that purpose, will consider how they can limit or entirely get rid of the baker's, butcher's, and grocer's bills. The following, I trust, may be of some assistance to them in so doing: —

Making Bread and brewing Beer. — A sack of flour, a fitch of bacon, and a barrel of beer, are as agreeable articles, in the shape of household stuff, as any poor man can wish to contemplate; nor would any labouring man ever be without them, if I could induce him to adopt the system I propose. With regard to the first, let a sack of wheat be purchased at the market, or at the market-price from a farmer. After grinding it at the nearest mill, let but the very coarse bran be taken out of the flour: it will, when made into bread, be fine enough for any healthy person; and be more nutritious than the compound of flour, potatoes, alum, and burnt bones, which otherwise he will have to purchase of the baker, at an exorbitant price: and, as to the making up, why, every woman ought to be able to make bread; indeed, the process is so simple, and generally known, that it would be useless to state the particulars, unless it be to observe, that, after the *dough* has been well

kneaded, and *risen* with the yeast, in afterwards making it up into loaves or cakes, the less it is worked with the hands the better, as, if kneaded much, the bread will always be heavy. Another advantage attends the poor man who purchases his own wheat. There is the bran, every now and then, for the hog-tubs; and, as for yeast, I will soon show him how he may obtain a regular supply the year round, and some to sell besides, with very little trouble or expense, when I speak of brewing.

No man can be said to be very poor who has got a good flitch of bacon or two hung up in his house: it is a great promoter of happiness, and makes a man independent of the butcher; he can at any time have a good supper or dinner, without sending his wife, or running himself, to the market or butcher's shop, to get a bit of meat at an extravagant price, more than a quarter of which will be wasted in dressing. How this bacon may be procured I will afterwards show.

In brewing, as in baking, the wife must likewise be the operator, for one is as easy to do as the other: indeed, it is as easy to brew as to make tea; and, unfortunately, most women are too dexterous at making the latter; nor does it require any very large vessels for either brewing or preserving beer. A pot or boiler that will hold four gallons; with two or three tubs, say a small square washing-tub, and a bucket or two; and, if a small cask cannot be got, two or three large jars, to preserve the beer in, are all that need be required in the shape of utensils.

Surely no maltster would refuse to let a poor man have a peck of malt and two ounces of hops.* With these his wife may go to work, and boil rather more than three gallons of water; as soon as it boils, take it off, and let it stand till she can see her face in it; then (having previously put the peck of malt into a tub, say a washing-tub, with a small hole bored in the side, level with the bottom, and covered inside with a few small birch twigs and a piece of coarse canvass, while the outside is stopped with a wooden peg), then, I say, pour the hot water upon the malt, stir it well for a few minutes to mix it, cover it over with a sack or cloth, and set it by the fireside, to keep it warm, for three hours; after which, pull out the peg, and drain the whole into a bucket. Immediately after, put in the peg, and pour in upon the wet grains as much water as before, quite as hot, or a little hotter than the first; then cover it over, and set it by the fire, as before, for two hours. This finishes the mashing. The moment the boiler is emptied the second time, put into it the first run [the first quantity run out], boil it a quarter of an hour: add the two ounces of hops, and continue the boiling half an hour longer. Then strain the contents through a fine sieve (to keep back the hops), into as shallow vessels as can be procured, to cool the wort as quickly as possible. Boil the second run half an hour with the same hops as before, and cool the wort in the same manner. Mix them, and there will be above five gallons, which, when mixed in the washing-tub with a small teacupful of yeast, will ferment for two or three days. It should, during this time, be frequently skimmed; for this is *yeast* as well as the sediment. When this fermentation ceases, the beer may be put into jars, where it will probably ferment, but slightly, for two or three days longer, after which it is fit for drinking. A good cask would, of course, be better than jars; and better, also, would be the beer, if brewed in larger quantities: but if beer cannot be brewed except in large quantities, then that alone would ever be an insurmountable obstacle to the poor man; and my object is to show that beer, and good beer, may be brewed with common domestic utensils, with great facility, and without at all injuring them; for, surely, a washing-tub is not a straw worse for having a hole bored into it, a small cork will effectually repair it in half a minute.

* We have suggested the idea of every cottager growing his own hops; and also his own barley, and making his own malt. (p. 147.)—*Cond.*

This, then, is the beverage which most assuredly ought to supplant the pernicious and expensive use of tea. Beer is always ready; it is wholesome, it is hearty, and it is cheap; it does not require the ceremony of boiling the tea-kettle, nor the parading of teacups and saucers, twice or thrice a day; it does not require the adjuncts of sugar and milk to make it palatable; it does not exhilarate to produce palsied debility, but, while it exhilarates, it nourishes and strengthens. It does not require more than a quarter of a man's earnings to purchase it, as is the case with tea, whereby he is deprived of some of the real necessities of life; but a tenth portion of his earnings is sufficient to supply him luxuriously with this good and truly English fare. Look at the comparative cost of tea and beer for one week. No woman, if the money can be got by hook or crook, will use less than 3 oz. a week, at 5*d.* an ounce, equal to 1*s.* 3*d.*; 1 lb. of sugar *, at 8*d.*; milk, 7*d.*; amounting to 2*s.* 6*d.*, without reckoning any thing for butter, fuel, loss of time in boiling the kettle and in gossiping, or for breakage; while, on the other hand, a peck of malt and 2 oz. of hops cannot amount to more than 2*s.*† This malt and hops will produce upwards of 5 gallons of

* We have shown how the British cottager may grow his own sugar, or substitute honey; and what substitutes he may grow and use for tea and coffee. In the milder parts of England, he may grow his own Chinese tea. — *Cond.*

† We warmly approve of every cottager brewing his own ale or beer; and would wish him to brew it good, and drink it twice every day; but we would not deprive his wife of a cup of tea, at all events, once a day, and twice if she chose it, unless she preferred coffee in the morning. We object to the principle of diminishing the articles which constitute the necessities of life for the labouring classes, by which we mean all those who have no other capital than their hands or their heads; because nothing can be more certain than this, that the value of labour will always be estimated by what constitutes the necessities of life for the labourer. The price of labour for the time is always regulated, to a certain extent, by the supply of labourers; but the fundamental principle upon which this price hinges, like the fundamental principle of the price of any piece of goods, is the cost of production. A mud cabin, a bundle of straw, and potatoes, are the raw materials out of which is formed a country labourer in Ireland, and he is paid with 5*d.* a day; but, as we have lately seen, he will work for 3*d.*, or even 1½*d.* In Scotland, the huts for labourers are of stone, often colder than those in Ireland, and, as a shelter from the weather, nearly as wretched; but the inhabitant is a little more particular respecting his bedding and body-clothing, and to potatoes he adds oatmeal. The cost of production being thus greater, the wages vary from 1*s.* to 3*s.* a day. Before a Scotch labourer will work for 1*s.* a day, he will emigrate; because he cannot live upon that sum, and has not such a ready claim on his parish as the English labourer. In England, no man will work for twice the regular wages of Ireland: he will rather go on the parish, by which he is, in general, certain of better food than is procured by the labourer in Scotland; and, at least, of as good bedding, and better lodging. If English labourers could be made to live upon potatoes, and lodge in mud cottages which they could erect themselves, the number of labourers would soon be as great, and the price of labour as low, as in Ireland, bating the difference of the cost of raising potatoes in the two countries. If, on the other hand, the labourers of Ireland could be refined to such a degree as not to be able to exist without good bread, butcher's meat, beer, and tea and sugar, the wages of labour, even when there was a glut of labourers, would bear an approximation to what was equal to the purchase of these articles. We are justified in saying this from what takes place in England and Scotland, when labourers superabound: and we are supported by all political economists when we say, add to the enjoy-

good beer, affording three pints a day for a fortnight: and this, too, without any extra-expense; for nothing can be fairly charged against the beer for fuel, &c., for the grains and yest cover all expenses; the yeast will keep, and will always be ready for baking. Thus, in addition to all the benefits attending baking and brewing at home, there is this important advantage, in having a quantity of bran and grains occasionally to add to the daily accumulating mixture of cabbages, greens, carrots, turnips, greasy wash, &c. &c., in the hog-tubs, to make a provision for a pig.* I say *hog-tubs*; for be it remembered that one tub is not enough even for one pig; and, however contrary it may be to general opinion or common practice, it will be found (and it is a thing worth knowing) that a pig will fatten sooner on stale food than on fresh: why I do not know, unless it is owing to the more uniform quality of the food; for, although a pig is a gross, and certainly an accommodating, feeder, nevertheless he prefers a regular or a gradually improving diet to one of a fluctuating nature; and great inequality must inevitably attend the daily mixture of fresh food.† For this reason, two tubs should

ments of all classes, and especially of the lowest; introduce luxuries among them to such an extent as that they may become necessities; you will thus, as long as they can procure them, increase their happiness, and, by increasing the consumption of produce and manufactures, promote general prosperity. Let every labourer, therefore, have good ale, at all events, and try hard for tea, coffee, and sugar for his wife, and milk for his children: what is powerfully desired will be found, and what is found essential will be retained.

At the same time it must not be forgotten, that the only way in which a labourer, or any one else, can acquire capital, is by saving it out of his income; and, therefore, having once procured such wages as will enable him to enjoy tea, coffee, and other things, the secret of his making a little money is to deny himself such a part of those things, to which he is entitled, as he can do without, and yet not lessen his strength, nor injure his health. In this view of the subject, the objections of our correspondent against tea may be defended; but, on general principles, we would no more banish tea and sugar from the cottager's table than we would flowers and fruits from his garden.

Our correspondent mentions gossip as one of the products of tea; but why should not the cottager's wife have her gossip as well as the wife of the landlord? Some relaxation is necessary to every human being; let the wife, therefore, enjoy herself in the evening over a cup of tea, and it will be something for her to look forward to during the labours of the morning. Neither man nor woman can go on for any length of time without relaxation; nay, even dissipation. Our correspondent hints that tea exhilarates to produce palsied debility; but surely this can only result from an immoderate use of the article: ale will do as much, if taken to excess. We have no fear of the labourer's injuring himself with tea, or even spirits, respecting which so much has been said lately in the newspapers and magazines; all that we are anxious for is, that they should have plenty of both. If a man chooses to kill himself with spirits, ale, or tea, so much the worse for him; he is to be pitied for his bad taste: but the government need not legislate on this account; all they have to do is, to take care that men who are killing themselves do not kill, injure, or demoralise their neighbours. The cares of life must be forgotten at intervals; and, therefore, the greater the care and misery, the greater the necessity for dissipation: nobody hears of men in comfortable circumstances killing themselves by drinking. Make labourers comfortable, therefore, and you may safely leave spirits as low in price as they can be sold: any evil result will soon cure itself. — *Cond.*

* Let the cotter's children collect all the acorns and beech-mast they possibly can. — *Shibboleth.*

† *The Pig.* — The sty ought to be constructed with a shed-roof; and

be placed, side by side, one always being filled while the other is being emptied; and a portion of this stale wash daily mixed with a few potatoes that have been boiled, bruised, and put away dry in a box or basket, will make good food for a growing pig during the summer season; though, of course, more substantial food will be required before the animal can be properly fattened.

Sty and Cesspools. — If a sty has not already been erected near his cottage, no industrious man will rest an hour until he has constructed one; which may easily be done, when no better materials can be got, with a few posts, well wattled and thatched with heath or furze. For paving a sty, large flat stones are better than bricks; and, where the pig has to lie, the ground should be kept high and dry. A channel on the lower side should likewise be made, to take the washings of the pig and rain into two cisterns or cesspools, which should be sunk, side by side, close to the sty*, so as

should be about 6 or 7 ft. wide, with height in proportion. In order to keep the pigs dry, a sufficient slope must be given, not only to the floor of the inside, or sleeping-place, but to the outside, or eating and exercising area; and, according to Marshal, every pig should have a rubbing-post.

The pig is an animal by no means nice in its food, as he will graze, eat cabbage leaves, common turnips, Swedish turnips, turnip tops, potatoes, &c. &c.; but the potato is the most nutritious article generally produced from the garden. They ought never to be given in a raw state, for it is an established fact, that, when so given, they will scarcely keep swine alive; but, when boiled (and the water in which they are boiled should be invariably thrown to the dungheap or cesspool), potatoes will contribute not only to the growth but to the fattening of pigs. Such food, given in abundance, will make a pig grow freely, and keep him in tolerable condition; but, for properly fattening him, food of a more nourishing quality must be given. Barley-meal, buck wheat, or barley-meal and pea-meal, given in a state of acetous fermentation, is considered very excellent for fattening hogs. The animal ought to be inured to this food by degrees, to prevent a surfeit. — *A Friend to a Cottager.*

* *Manure.* — A very great deal of manure may be collected from the road and lanes. A pit should be sunk and puddled near to the privy. In this all soapsuds and other refuse should be preserved. The privy manure is very useful, when mixed in a compost. Quite sufficient manure may be collected in this way for a cottage garden of a quarter of an acre. The pig and poultry will make as much dung as will manure ground sufficient to grow potatoes to supply the family a year; and any farmer will gladly let ground to a cottager for that purpose, rent-free, for the sake of the effect of the dung on the succeeding crop. — *Shibboleth.*

Management of Manure. — The manure may be procured from the pigsty, the cleanings of the rabbit-hutches, and the litter of the garden, all of which should be collected into a pit, and covered with a layer of earth to prevent the escape of the gaseous part. Care should be taken to throw a layer of earth over every additional quantity of manure; and if a little lime or salt could be afforded, and strewn over it beneath the layers of earth, decomposition would be accelerated, and the quality of the dressing greatly improved. Manure may also be increased by collecting dead leaves, which, in autumn, may easily be procured in considerable quantities, wherever there are hedges or trees, and which may be added to the other refuse. It is also a custom, in very general use amongst cottagers, to collect manures from the roads and commons. For the reception of the manure, it will be requisite to have two pits, otherwise part of it will become too much decomposed before the other is fit for use. If possible, these should be situ-

to catch every particle of manure, liquid as well as otherwise* ; and, though this simple provision may at first appear trifling, it will soon be found of great importance to the garden ; for it is chiefly on his pig that he must depend for a supply of manure, without which his garden will soon become unproductive. Let any person try the experiment of watering with liquid manure but for one season, and he will soon find out the truth of the observation, if he diligently water his cabbage bed, by alternately emptying the cesspools. I say *alternately*, for, even in this case, the liquid manure is improved by time ; though, whether this improvement is the effect of an imperceptible fermentation, by which the greater portion, by further decomposition, is more readily absorbed by the roots, or whether this property is superinduced through the stagnancy and partial exposure to heat, by which myriads of animalcules are generated, and which may possibly operate ultimately as an animal manure, I do not know. But such is the fact : and, if any person wishes to have a few early cabbages, let him apply liquid manure in abundance, and he will seldom fail of having a dish of cabbages a month before the usual time, if the plants are managed as will be hereinafter directed.

Having now got his sty in order, let him look round among the neighbouring farmers, and try if he can purchase a young spayed sow, that has had but a litter or two of pigs.* Such an animal will grow faster, and fatten quicker, than a younger pig, however good the breed. At last, having

ated adjoining the pigsty, in order that the drainage from thence, and the spillings of the food, may not be wasted. — *Practical.*

Manure is the moving power, and according to its richness and quantity the abundance of crops will in a great measure depend. It will be absolutely necessary to have a small cesspool, or cask, perfectly water-tight, placed in the dung-yard, into which the drainings from the pigsty, &c., may have free access ; and all water from the house must be emptied into the reservoir, such as soapsuds, urine, &c. If there is not a sufficiency of these ingredients to fill the cesspool quite full, let it be filled with water ; and, on the following day, let it be taken up with a scoop, and thrown over the heap of dung : let this be done at least two or three times a week. No opportunity should be allowed to pass which can be given to enlarge, or in any way contribute to, the stimulating or enriching qualities of the compost heap. In forming which, grass from the sides of ditches or hedges, ferns from commons, all weeds from the garden free from seeds, mould, or, what is preferable, thin turf from commons or the sides of roads, and, failing that, mould from the quarters of the garden, the [wood or peat] ashes from the house, the sweepings of the premises, &c., must be carefully collected, and carried to the heap of dung. The pigsty must be cleaned every week, and fresh litter given, the manure being carried to the general heap, which must be frequently turned over, in order to accelerate its decomposition, and to more regularly mix the animal with the vegetable substances. At the end of every month or six weeks, the dung-yard is to be thoroughly cleaned : or, what will be better, put the prepared manure into one corner ; cover it over with sods, which will prevent the fermentative heat from evaporating, and the rain from penetrating into the heap, which would check fermentation. Then bring a fresh quantity of compost, and prepare it in the same way, and for the same length of time, when it will take place of the other, which, most likely, will have been used in the interim. — *A Friend to the Cottager.*

* He is only to keep one pig at a time, when he has no cow ; but when he has a cow (as every country labourer ought to have), he can keep two. In either case, he can kill one for pork, say on the 1st of August ; one for bacon, about November ; and the other at Christmas or Candlemas. One of these he can sell, to help to defray the expenses of purchasing. — *B. R.*

Cottage Gardens, live Stock of the Cottager,

such an animal fairly lodged under the roof of his sty, it will daily be of more importance in his eyes; it is his live stock; is constantly increasing in size and value; and, in fact, is continually uppermost in the poor man's mind. If he observes but a few dry leaves blown into a ditch, he begs them, and brings them home for bedding; or he picks up a bundle of fern by the road-side; in short, any thing which he can honestly lay his hands on will always be brought home, and he will never grudge any trouble of this kind. Besides, all this helps to make manure; and no manure is so rich as that which is taken from the pigsty. This animal is now, however, to be well supplied with food, and fattened against Christmas. The hog-tubs will now be had in requisition; and their great value will be properly appreciated, for there will be no necessity for mowing every time the pig wants a meal: with a portion of stale wash, and a few mashed potatoes, the pig will grow and do well till the end of September or beginning of October (potato-digging time*). At this season, a sack of barley-meal should be purchased; and about 3 or 4 lbs. of this meal, with 13 lbs. of mashed potatoes, which, I will show, may be set apart for that purpose, when I speak of the produce of the garden, being daily added to thicken the stale wash, will make excellent food; and, if the pig has been well attended to during the summer, should not fall short of weighing fifteen score pounds by Christmas, to which time the food is calculated to last.

There will, of course, be no want of good meat when the pig is killed; and he may, perhaps, without injury to himself, dispose of a few joints, such as the spareribs or loins, which his more opulent neighbours will always be ready to purchase.† This trifle may assist him to buy another pig, for he should never be long without one. I should think it almost unnecessary to observe that, in fattening a hog, he should always be kept clean, warm, and dry; never have more food given at one time than he will consume; should be fed four times a day; and not killed till he is almost too lazy to come to his trough. A few peas are at all times desirable; and it is a good plan to have a dry corner boxed off for holding a few. After eating a few peas, a pig always wants to drink, and the stale wash will be ready for his use. I do not mean to say that bacon fatted in this manner will be equal to that fatted on barley-meal and skimmed milk. Certainly not. But this I assert from my own experience, that, under the present supposed existing circumstances, this mode produces the best quality and greatest quantity of bacon, from a certain given quantity and quality of food, and which quantity and quality can only be procured by the labouring man.‡

* The quantity of potatoes requisite to feed a bacon pig of 90 stone, or 320 lbs. weight, allowing 1 peck per day, from the 1st of August to the 31st of December, is 3½ bushels; and a load of oatmeal, of 16 stones' weight, will be required to finish fattening.

† Potatoes to feed a pork pig of 8 stone or 128 lbs. weight, from the 1st of July to the 14th of September, allowing 1 peck per day (without oatmeal, pork will be quite fat enough), 15½ bushels.

‡ Potatoes to feed a pork pig of 6 stone or 96 lbs., 1 peck per day, from the 31st of December to the 12th of February, 11½ bushels. — J. A.

† I would also strongly recommend the keeping of bees, as a source of profit, with almost no expense; the produce might be advantageously put in the purchase of pigs, garden-seeds, too's, &c. — J. A.

‡ Rather less than a quarter of an acre will produce an abundant supply of culinary vegetables, bacon, or pork, for a labourer, his wife, and children, for a year, allowing upwards of 10 lbs. avoirdupois of bacon, 1 pork a week: as, however, hams are not the most economical of produce, I would recommend them to be sold, and, with the produce, to purchase, to make pork of. — J. A.

Fowls and Ducks. — Every man who keeps a pig should keep fowls. Three or four hens and a cock will prove no small addition to a poor man's stock; and a few potatoes and peelings, with the *run* of the pig's trough, which they will always keep clean, will be all they require in the summer; but to make them lay eggs, when eggs are valuable, they must be well fed with oats, barley-meal, or Indian corn; have a dry place to roost in, to shelter them from the wet weather; and be kept quite clean. * Young pullets, 9 or 10 months old, are the best for laying in winter. Ducks are both useful and profitable: they clear away a deal of unsightly offal, will travel a great distance from home in search of food, require but little at home, and lay a great number of eggs; but they are not good mothers, and seldom rear half their brood, where there are many hedges and ditches in the neighbourhood; they likewise very frequently drop their eggs in the water, if not carefully watched and shut up when expected to lay. A hen answers better for a mother to ducklings than their natural one. Not less than a drake and two ducks should be kept.

Cultivation of the Garden. — I will now proceed to show how 20 rods of ground may be cultivated so as to produce vegetables sufficient for a man, his wife, and two or three small children (for, for every child above 4 years of age to 7, 2 rods of ground ought to be added); besides enough, with the stale wash and barley-meal, to keep a pig, fowls, and ducks, all the year round.

I will divide the garden in the following manner: —

20	{	1 Rod of Onions and Leeks ; the product will be	-	3 bushels.
		$\frac{1}{2}$ do. Carrots	- - - - -	2
		$\frac{1}{2}$ do. Windsor Beans	- - - - -	3
		1 do. Parsneps	- - - - -	2
		3 do. Cabbages, with a row of Scarlet Runners to be	}	525 cabbages.
		planted round the edges		
		<hr/>		
4	{	do. Early Potatoes,	- - - - -	480 lbs.
		being upwards of $4\frac{1}{2}$ lbs. from the middle of		
		June to October, for each day.		
		4 do. Prussian Potatoes	}	- - - 2410 lbs.
6 do. Devonshire Apple Potatoes				

Which will afford 5 lbs. a day from the beginning of October to the middle of June, for the use of the man and family, being 258 days; and 13 lbs. a day from the 1st of Oct. to Christmas, for the pig, 86 days: the whole amounting, by this calculation, to 2408 lbs. or 40 bushels; or 640 bushels of 60 lbs. per acre. †

The ground must be good, well manured, and well managed, to produce the above crops. Let us now see how this is to be effected, which will be no difficult matter if the following details be attended to: —

Onions may be cultivated for many years on the same ground, when properly manured, without failing to produce a good crop ‡; but, if the manure

* In the depth of winter, take care to feed geese and other poultry, as they cannot obtain much out of doors; and, if suffered to get lean at this time, they will not lay well or early in spring. — *Shibboleth*.

† We think this calculation too high; an allowance should always be made for bad seasons, and unforeseen accidents. If 15 rods were allowed for growing these 40 bushels, this would still be at the rate of 420 bushels per acre, which is a very good field crop. It is true, nevertheless, that Mr. Knight (*Gard. Mag.*, vol. v. p. 294.) has grown at the rate of 665 bushels of 82 lbs., which is 890 bushels of 60 lbs., per acre. — *Cond*.

‡ In exposed situations, onions should not be sown early, as they are

is not plentiful, let it be pointed in just below the surface.* The ground having been previously well dug, sow the seeds, broad-cast, in March, and edge the beds with a row of leeks, for no ground must be lost.† A pinch or two of the yellow Florence or Bath Cos lettuce, with a few scarlet-topped radish seeds, may be thrown in with the onion seed, to serve for a treat during the hot weather. The seeds should be sown thick, to have plenty of scallions to thin out; and a dozen onions, planted in the autumn or winter, in a warm situation, will always produce seed in abundance. Half a dozen leeks may be left for the same purpose.

Carrots do not require much manure, and are not so liable to be eaten by the slugs, when sown in April, as they are when sown a month earlier. The seed should be sown in drills 9 in. apart, very thick, so that they may be thinned out for the pot twice or thrice a week during the summer. The crop should be dug up the moment any maggots make their appearance‡, no matter how early, and pitted; half a dozen roots planted in the spring will always produce more than enough of seed; but a little of the early short-horn carrot seed should likewise be sown for an early supply: the cottager would find his advantage in so doing. However, let him never try to save seeds of both sorts in one season.

Windsor Beans cannot well be planted too early; but the best time to insure a crop is the latter end of January or the beginning of February; and if well managed, and carefully looked after, that is, if they are manured, hacked, earthed up, and the insects destroyed as they appear, a rod of ground, planted with broad beans, will, with a bit of bacon, afford many an excellent meal to a hungry labourer; but, if he live in a coal country, let him beware of using too freely the coal ashes§ about his beans or scarlet runners, for they are poisonous to both as well as to peas; indeed, they are not of much value as a manure, except on grass land: but they do the least harm to onions and potatoes in the garden. Windsor beans are generally dear at the seed time, so, as a matter of course, a cottager will save his own.

Parsneps should be sown in March, in drills 18 in. apart, and left from 6 to 9 in. apart in the row. This is an excellent vegetable, and will be found useful all the winter: indeed, some people think them better for having had

generally hurt by frosty winds; and, if this should happen when they are from 4 to 6 in. long, they seldom turn out well. Perhaps the grub in onions is often brought on by injuries of this kind. I have myself observed, that, when onions were protected by pea stakes or bushes from being injured by frosty winds in the spring, they escaped disease in the summer; while others in the same bed, that were damaged, were entirely lost; which has made me, when I sow early, to stick pea stakes on the north side of the beds, and I have always found such practice successful. — *B. R.*

* A quantity of hen's dung should have been saved, and it may be sown moderately thick on the beds, either before or after the seeds are sown; or after covering the beds out of the alleys. Pigeon's dung, and the dung of poultry, should be collected with great care: in some places, more is thrown away than would manure a large garden. — *Shibboleth.*

† It would be desirable to sow a small plot of onions early in August, to draw green in the spring; and such as do not run to seed will make fine heading onions in June and July. — *J. A.*

‡ The best method I have found of destroying the worm in carrots is, by watering between the rows, in June, with sea-water; a large garden painful to about 9 to 10 yards a row; after which, a watering of common water, from the rose of a pan, will be useful to wash the tops: this to be done in the evening in a dull day. — *B. R.* In all probability, lime water would have the same effect. — *Cond.*

§ Collect wood ashes, but by no means coal ashes. — *A Countryman.*

a sharp frost or two upon them. Be that as it may, when the crop is taken up they should not be *pitted* very close, else they will heat and rot: avoid this, and any place free from rats and mice will answer the purpose. Three or four roots, planted early in the spring, will yield plenty of seed.

For *Cabbages*, three rods of ground will afford upwards of 500 the first cutting, and double that quantity during the summer and autumn; considerably more than half of which, together with the leaves, will go, when boiled, into the hog-tubs, forming, altogether, no trifling quantity of food for the pig.

To make sure of an early crop of cabbages, the seed should be sown about the middle of July and the first week in August, of the Fulham kind; but be sure to get a good sort, for there are numerous varieties. Prick out the seedlings as they advance in growth; and finally plant out, for the winter, the first sowing in the last week in August, and the second sowing in the last week in September. The prickings-out and final transplantings may all be done on the ground, which is now being daily cleared of early potatoes. The sugarloaf and drumhead cabbage-seed may be sown in August, and left in beds to be planted out in the spring, where and whenever a corner can be found for them. A few seeds of the early York and sugarloaf may be sown likewise in the spring, to fill up with, or even to plant whole rows, as it may appear necessary. If, towards the winter, the plants of the first sowing appear very strong or topheavy, a little earth may be drawn about them to keep them steady; but it is not a good method to earth up cabbage plants before winter, unless, as I have observed, they are *very early*: it enables the slugs to get to them with greater ease; it is apt to make them long-legged, and, what is worse, *late in cabbaging*. Cabbage plants should always be transplanted in dry weather. Two or three of the best may be marked when cut, and left for seed.*

French Beans, or rather scarlet runners, may be planted in the middle and latter end of April, with great advantage, round the cabbage bed: they will benefit rather than injure the crop, and need not take up more than a few square yards of ground. They should be staked early, and carefully protected from the frost. A second sowing, in the latter end of May, will be found of great service when the first sowing has become nearly unproductive. In dry and airy situations, scarlet runners should not be allowed to run more than 5 ft. high: they will break out below, and bear plentifully. †

* A cottager might often make a few shillings by saving seeds, and selling or exchanging with his neighbours, or with the seedsmen. In different parts of Scotland this is done by labourers, weavers, and other mechanics. Torrieburn is, or used to be, famous for its seeds of German greens; another village near Stirling for leek-seed; Dumfermline and Paisley were also noted in this way; and what are called the Russian stocks are raised from seeds saved by the weavers of Silesia and Saxony. — *Cond.*

† If sticks are scarce, sow the scarlet runners 18 in. apart, stopping the runners as they advance; and, by this means, they will bear most abundantly, till the frost destroys them. If they are to be supported by sticks, sow them in lines in different parts of the garden, as they bear more abundantly when detached from other plants. This is a very useful vegetable; and, if preserved in the German manner, by salting, like sauerkraut (*Gard. Mag.*, vol. iii. p. 343.), these and many other vegetables will be rendered of great value to the cottager. — *Shibboleth.*

When sticks cannot be got, strings will do. Stretch a strong string, or a straw rope, horizontally, 7 or 8 ft. above the row, supporting it by a stick at each end, and at every 10 or 12 ft. distance; stick a peg in the ground, at the root of each plant, and from that stretch a string to the horizontal cord above. — *Cond.*

But, if the ground is wet, and much sheltered, they will bear better by allowing them to run 7 or 8 ft. Seeds are always abundant.

Early Potatoes. — To have a crop of potatoes very early, plant ash-leaved kidneys, whole, about the middle or beginning of October, in drills 9 in. deep, well covered with muck, 8 in. apart, and 14 in. between the rows: they will be full a fortnight earlier than if the planting be delayed until February, and will be quite ready by the middle of June. An excellent crop of radishes may be grown on the same ground, for the mould should be left as light as possible above the potatoes; and, if radish seed be sown in the beginning of January, and covered over with some straw or long litter, to preserve the seeds and plants, as they come up, from the birds (protecting them, of course, in severe weather), he may, by a little extra-diligence, sell from 10s. to 20s. worth of radishes out of this small plot of ground.*

In the middle of June he will begin to dig a few potatoes daily, always remembering to bury the tops; and as soon as half a rod is cleared, let it be sown immediately with some Dutch or six-week turnip seed: let the same be done with the next half rod.† The middle of July will now approach, and this is the time to sow Fulham cabbage seed; for which there will be plenty of ground, not only for sowing but for pricking out; and, finally, the whole three remaining rods may be planted with the cabbage plants, which will finish cropping the ground from which the early ash-leaved kidneys have been dug. However, in this piece of ground, when the first

* By the Lancashire mode of raising early potatoes, which seems particularly suitable for the colder parts of Britain, they are generally ready about the beginning of May. Mr. Saul of Lancaster says, "Put the potatoes in a room, or other convenient warm place, in January; about the 2d of February, cover them with a woollen cloth for about four weeks; then take it off, and by so doing you will make the sprouts much stronger. Towards the latter end of March set them, covering the sprouts about 2 in. deep. If the sprouts be about 2 in. long when set, the potatoes will be ready in 7 or 8 weeks afterwards." (*Gard. Mag.*, vol. ii. p. 48.) The sets of the extreme end of the potato are found to grow faster, and ripen about a fortnight earlier, than those from the root end. In Lancashire, therefore, the sets from the two ends are separated; and, if planted at the same time, form an early and succession crop. (*Gard. Mag.*, vol. i. p. 406.) In Denbighshire, the potatoes intended for seed for the following year are taken up before they are ripe, just when the outer skin peels off, and before the stalk or stem begins to wither; they are then laid upon a gravel-walk, fully exposed to the sun, for a month or six weeks, when they become quite green and soft, as if roasted, and often much shrivelled: they are then put away, and protected as other potatoes are. In February they are examined, when every eye is generally found full of long sprouts fit to be planted. Only two sets are made of each potato, the eye or top part, and the root or bottom part. They are separated as in Lancashire; and, when planted in the common ground, the eye or top sets are earlier by a fortnight than the others. They are generally fit to gather before the middle of May. (*Gard. Mag.*, vol. ii. p. 172.)

† The fly is very hurtful to this crop. I have tried common soot dusted over the plants infested, and afterwards given a good watering, which banished every vestige of fly from them in a very few days. — *B. R.* The cottager may consider the appearance of the turnip fly as the appearance of a crop of weeds; let him, therefore, dig down the whole, and sow again immediately. Before a second crop of flies can appear, the seed must be sown, that is, the eggs deposited; and this is not very likely to be the case. — *Cond.*

cabbage seed is sown, some seed of the common rape should be sown for winter and spring greens ; they are very good and very productive.

Late Potatoes form an important crop to the cottager ; for upon this he relies for a supply both for himself, his family *, and his pigs, so that no trouble must be spared in digging and manuring the ground.† All the scrapings, the mixture, and pig's litter will now be found necessary ; for, from these 10 rods of ground, 10 sacks of potatoes, each weighing 240 lbs., must be obtained. Two sorts may be planted as follows :— Some time early in April plant 4 rods with the Prussian potato ; it is an excellent sort. It is productive, and, if necessary, it keeps well ; although it is quite fit to eat after the early sorts are over, being an intermediate sort between the early and late ones. This sort should be planted (*single eyes*) 7 or 8 in. apart, in rows 18 in. asunder. They will be ripe, and must be dug up in the beginning of September, whether they are wanted or not ; and immediately plant the whole 4 rods with the rape plants above mentioned. The remaining 6 rods of ground may be planted, the first week in May, with the Devonshire apple, or prince's beauty potatoes ; both red, and excellent sorts. Plant *single eyes*, cut from prime potatoes (as all single eyes should be), the same distance as directed for the Prussians, unless the ground should be wet ; in which case, 2 ft. between the rows will be preferable : but, at whatever period potatoes are planted, in all cases, as soon as the plants show their heads, let the ground be well moved about them ‡, that is, hacked with a light mattock. This will destroy the weeds §, and cause the plants to grow rapidly, till it is time to earth them up, which should be done when they are about 6 in. high. This operation, with the previous "hacking," if done in fine dry weather will most effectually destroy the weeds for the season. ||

* Potatoes, after being washed, may be put on to boil in cold water without being peeled. When half done, the water may be poured from them, and fresh cold water added, which is also to be poured away when they are boiled sufficiently. They are then to be left by the fire to dry for a short time, before the skins are taken off, and will be found more floury when boiled in this way than when the water is not changed. This quality, so valuable to those who make the principal part of their meal of this vegetable, and which renders them a better substitute for bread, may be considered as making amends for the greater length of time taken in cooking, and, consequently, larger consumption of fuel.— *Practical*. The Lancashire mode of cooking potatoes is as follows :— "Brush off the skins, set them on the fire in cold water : when boiled, pour off the water completely, add a little salt, and dry them well on the fire." (*Gard. Mag.*, vol. i. p. 407.)

† The richness, the quantity, and the healthiness of his crops will depend on the abundance and judicious application of manures ; the complete extirpation of weeds and noxious roots ; regular, deep, and repeated forking ; a careful choice of seeds for sowing ; and, as far as his confined space will admit, a proper rotation of crops.— *A Friend to the Cottager*.

‡ Hoe between ridges of potatoes and cabbages, 6 or 7 in. deep, with a two-pronged hoe.— *T. A.*

§ As soon as any plants sown in drills make their appearance, be very careful to stir the soil between them with a thrust or pronged hoe, whether weedy or not. This is of most essential service to a garden, and is very seldom sufficiently attended to. Where this is practised, there are no weeds ; and less manure, with this treatment, is better than more manure without it.— *Skibboleth*.

|| During this and the following months, let the ground be deeply and frequently hoed among all the crops, particularly during dry weather. Weeds

By way of experiment, a handful or two of Cobbett's dwarf Indian corn may be planted, in the latter end of April, round the edges of the potato plot, or against a fence with a warm aspect; but the corn must be planted considerably thicker than what Mr. Cobbett recommends. In order to produce a crop worth growing, 9 or 10 in. in the row is wide enough; and, as single rows only can be grown in this case, the corn might even be planted thicker. In favourable situations, I know that it will ripen well. Indian corn is good for fowls, and excellent for fattening pigs; but it must not be given in too large quantities at a time to the latter, for it is of a very heating nature. *

Fruit Trees I have entirely omitted, because I think †, upon the whole, a small garden, such as I have described, is better without them. However, against his cottage let him train currants, gooseberries, cherries, apples, pears, or any sort of fruit tree he can procure, likely to thrive. Nor should I object to, but would rather encourage, the cultivation of a few carnations, picotees, pinks, Brompton and ten-week stocks, &c., with which he might ornament his little dwelling. ‡ In doing the work necessary to crop and clean a garden of 20 rods § of land as I have directed, no labouring man who has

are no criterion for the regulation of these operations. — *A Friend to the Cottager.*

No plant is so much improved by deep pronging or mattocking between the rows, as the potato. With this treatment it will grow most vigorously in the driest weather, and in a very poor soil. — *Cond.*

* Respecting the propriety of introducing Indian corn, I am decidedly opposed to it, as no dependence can be placed on its successful cultivation. Our climate is not adapted to this species of grain, and I very much question if it ever will answer in this country, except in very favourable situations. If its cultivation were practicable with certainty, I would most strongly advocate its adoption; but I require a little more proof that it will answer in this country before I should consider myself justified in recommending it as a proper corn for the cottager to cultivate. My objection, I would be understood, rests solely on the unfitness of the climate; for the grain would be a favourite with me. I have sufficiently proved it to make myself perfectly satisfied with it as a wholesome, palatable, and nourishing food; and, if I have said little on its merits, it is because I consider it useless in this country, and not from any antipathy towards it as a proper species of aliment. — *A Countryman.*

On dry, warm, sandy soils south of York, we think Indian corn may be well worth cultivating in the cottager's garden for the purposes of feeding pigs and poultry. At Sandy, in Bedfordshire, it produced, in the very unfavourable season of 1829, at the rate of 105 bushels per acre, equal to 3 tons of good meal for feeding stock. Wheat, barley, peas, or beans, will not average 15 cwt. of meal per acre. (*Gard. Mag.*, vol. vi. p. 103.)

† The roots of the hop may be brought from the hedges, and planted in corners of the garden; their tops are very wholesome, and are as tender as asparagus; they climb and make a good summer-house. — *Shibboleth.*

‡ These flowers and prize gooseberries are well known to be great sources of amusement, and of harmless betting, to the Lancashire and other weavers and mechanics. We should wish to see fruit trees, ornamental shrubs, climbers, and flowers in every cottager's garden, with bees, poultry, rabbits (if only for the children), a singing-bird, pigeons, and a cat and a dog. Nature has kindly ordained all these little matters to be great things in the eyes of the owner and his children. — *Cond.*

§ Fifty perches of land, exclusive of that occupied by the buildings and pigyard, are sufficient to supply every requisite culinary vegetable, including potatoes, to a labourer's family, and to his live stock; the former consisting

regular employment, from six to six o'clock in summer, and from light to dark in winter, ought to lose one hour; and, likewise, the man who would require to be taught how to crop his ground the second year, would require it all his life. No person can go wrong if he but change the crops as much as possible in rotation, and observe, if the ground is of greater extent, the same proportions of different vegetables, potatoes and cabbages being always considered the most important crops. With regard to a few herbs*, any gentleman's gardener could, in one season, supply a whole village with as many as they could possibly require: a sage bush, a bit of thyme, a few roots of parsley, with balm and mint, are enough, and to spare.

In concluding these remarks, I may observe that I am perfectly aware a labouring man and a very small family usually consume a greater quantity of potatoes than I have allowed. The cause, I apprehend, will be found in the want of other vegetables, and good bread and meat. If a man has 14 score of bacon every year, this alone will afford him upwards of three quarters of a pound for every day, a greater quantity than 99 poor families in a 100 have throughout the country; indeed, no man wants to cram such a quantity of watery stuff down his throat, when he has a good slice or two of boiled bacon, cabbage, carrots, and good wholesome bread and ale.

II. *I shall now consider how a Man and his Wife, with from Seven to Eight or Ten Children, may be supported with the assistance of a Cow; show the Advantages of keeping one; what Ground is necessary, and its Culture; and also treat of Rabbits, Pigeons, &c.*

Poverty will never enter the dwelling of an industrious labouring man (I proceed on the supposition that he is constantly employed, at from 9s. to 12s. a week), if he once can obtain possession of an acre of ground at a moderate rent, and a cow†, provided that it please the Almighty to bless him and his family with health.‡ So numerous are the benefits derived

of two grown persons and four children, and the latter, at an average, of one pig, three rabbits, three hens, and three ducks. This quantity of land will be found enough in a stiff soil; but if, on the contrary, the soil is rich and light, a less quantity may be found sufficient, and will certainly be more advantageous to the labourer in every respect, as it will require less time to be bestowed on its cultivation, and yield earlier and better crops. — *Practical.*

* A collection of herbs are very necessary, as distilled waters, wines, decoctions, and infusions, which may be obtained from the cottage-garden, might ward off diseases, and save the disagreeable appearance of a doctor's bill. — *Shibboleth.*

† To keep a Cow, upon hay and grass, will require 2½ acres of land capable of producing 1½ tons of hay per acre. A couple of Leicester ewes will prove much more profitable than a goat; they will bring at least two good lambs in the spring, that will sell well; and, should they be milked after the lamb is weaned, they will produce about one quart per day each, for three months. Their fleeces will help to clothe the family, either manufactured, or in waddings for bed and body clothes. — *A Countryman.*

Should the Puruk sheep of Ladusk be introduced, and be found to succeed as well as Mr. Moorecroft anticipates (*Trans. R. Asiatic Soc.*, vol. i.), they will be found invaluable for the cottager. They are said to be as easily kept as pigs, to give two lambs in twelve months, and to admit of being twice shorn within that time. (See *Mag. Nat. Hist.*, vol. iii. p. 144.)

‡ A Cow added. — Now comes by far the most useful animal to the cottager: here is a caterer for him and his family. That man who possesses a cow and a pig possesses a means of maintaining his wife and children in

from this inestimable creature, that no man ought to rest satisfied till he has accomplished the object of what ought to be his constant and unceasing endeavours. A good cow will supply a large family with milk and butter (and a great deal of the latter to spare) for 40 weeks, and with cheese all the year round. I made from one cow 217 lbs. of butter in 39 weeks. But suppose an ordinary cow to produce 180 lbs., and allow 80 lbs. for the use of his family, and no poor family ought to use more, there will then be 100 lbs. to dispose of, say at 8d. per pound, there is upwards of three guineas at once, ready to pay the rent, &c. &c., or to buy a couple of pigs; for a man who keeps a cow should never have less than two in the sty. A cow produces a great deal of wash for the hog-tubs; there is the washing of the milk-bowls twice a day; a lot of whey three or four times a week, for a skimmed-milk cheese should be made twice a week, while the milk is plentiful: if the *curd* is made while the milk is sweet, it will keep well for three or four days, with a little salt sprinkled over it, and covered with a cloth, in a cullender. Twice a week there will be the washings of the butter and churn; the little urchins will drink the buttermilk. Indeed, the refuse of every thing connected with a dairy becomes an excellent ingredient in the hog-tubs.

To find food for this very valuable animal becomes the next consideration.

Besides a comfortable, dry, fern-littered cowhouse, either to take shelter in or to be tied up in, to make the most of a cow, she should at all times, especially after calving, be abundantly supplied with food, and with as much water as she likes to drink. Now, to effect this, and to produce vegetables for a family of 8 or 10 persons and a couple of pigs, not less than an acre* will be required; and this acre of ground I would divide as follows:—

1 acre { 80 rods of grass land.
40 do. mangold wurzel.
40 do. kitchen-garden.

Let the 80 rods of grass land, then, be carefully cleaned of nettles, docks,

comfort. There are instances I could mention where a gentleman's labourers receive 9s. 6d. per week. One of these pays 5s. per week for his cottage, his garden, a field, and hay for his cow. Still, himself and his family appear clean (ruddy) and healthful; while other labourers, having the same wages, but no cow, appear ragged and pale, and themselves and families receive pay from the parish. Other labourers in the same township, keeping a cow, though poor, are still in comfort, the produce of butter more than sufficing for the family. — *Shibboleth*.

* For garden, &c.	-	-	-	-	1400 square yards.
For goats	-	-	-	-	300
For a cow	-	-	-	-	1700
An additional cow	-	-	-	-	1700
Horse	-	-	-	-	3217
For growing bread	-	-	-	-	4991
Barn, and addition to the dung-yard for the goat					70

13378 { of 2A. 3R. 1
24 Y.

A Friend to the Cottager

A plot of ground about 400 square yards, sown with lucerne, and mown once over, will keep a cow for 4 weeks. When it comes into full bearing will always be fit to mow once over by the 1st of May, and will serve the that month; and, if sufficient to grow a month after cutting, it will be mown again, and will then serve other four weeks. — *J. A.*

thistles, and broad-leaved plantains ; let it be yearly well manured with coal ashes, soot, and road-scrapings, &c, for it must be mown every year ; and to make it produce as much as possible, the cow should never be allowed to graze upon it in wet weather, or after the 1st of March. By this plan it may be expected to average upwards of half a ton of dry hay annually, besides the aftergrass. A portion of this hay or grass, or both, should be given daily ; it will be found to correct any disposition in the cow to *scour* : the hay will be found particularly useful in the calving season, or in sickness at any time.

Let 40 rods of mangold wurzel be sown in the latter end of April or beginning of May, in rows 2 ft. apart, and 18 in. in the row. * This root requires good, strong, rich land ; it must be well dug, and, when the plants are up, well mattocked, and kept clean. The produce, in this case, will seldom or never fall short of 10 tons, being a supply of 1 cwt. a day from October to May, and leaves in abundance may be gathered in September and October, leaving 4 months out of the 12 to be supplied with cabbages, greens, &c.

I know that it has been said that a cow will only consume 1 cwt. of fresh vegetable food in a day, but I must beg leave to dissent from this opinion ; for some cows will eat more than double that quantity. However, as 40 rods of mangold wurzel is a fair proportion of this excellent root, for it is greatly superior to the Swedish turnip for a milch cow, we must contrive to have the same quantity yearly, by changing the ground, which may thus be effected :—In October, as soon as the leaves are cleared away to the extent of 20 rods, dig up the roots, and pit them in a dry situation, and immediately dig and plant the ground with early potatoes, as before directed. This crop of potatoes will be succeeded by turnips and cabbages ; and 15 or 16 rods of the latter will supply (including the first and second cuttings),

* *Mangold wurzel* may be sown in beds, thinly, for transplanting, on ground previously occupied with early potatoes, peas, &c., and along with turnips for the cow. — *B. R.*

Mangold wurzel is the principal article on which I propose to keep the cow in winter. Four roots of 6 lbs. each, I have proved, would be sufficient for a meal to an ordinary-sized cow. Two of these meals, morning and evening, are 8 roots a day. From the first day of October to the last of April are 212 days, at 8 roots a day, are 1696 roots. A root of the above weight requires 240 square inches to grow in, that is, 12 in. in the row, and 20 in. from row to row : so that 1696 roots will require 314 yards. Mangold wurzel by itself is, however, too opening : it will be necessary to feed alternately with it and hay, 8 lbs. of hay at noon, and 8 lbs. at bed-time. With the requisite attention to watering, bedding, and cleanliness, &c., a cow will certainly be kept in good health, and yield milk and butter, if a good sort of cow for those purposes, in great abundance. — *J. A.*

Mangold wurzel delights in a rich loamy land, well dunged, and may be sown in rows, or in broad cast ; and as soon as the plants are the size of a goosequill, they may be transplanted in rows of 18 in. distance, and 18 in. apart, one plant from the other ; sow very thin, and cover the seed to the depth of an inch only. In transplanting, the root is not to be shortened, but the leaves cut at the top ; and, in planting, let the upper part of the root appear about half an inch above ground. In the seed bed keep them clear of weeds : when planted out, after once hoeing, they will suffocate every kind of weed near them. The best time to sow the seed is from the beginning of March to the middle of April, although they may be sown any time between then and the end of June. — *A Friend to the Cottager.*

Sow mangold wurzel in rows 2 ft. apart, and drop the seeds into holes made by the dibber, at 10 or 12 in. asunder in the row : to make sure, drop two or three seeds into every hole ; and when the plants come up, should there be any failures, make good by transplanting with the trowel. — *J. A.*

upwards of 40 cabbages a day for the remaining four months, forming a regular and an abundant supply the year round. In cropping ground, it certainly is a good rule not to crop two seasons following with the same vegetable; but this must, I think, be occasionally excepted, when we take into consideration the paramount necessity of a constant succession of crops to produce the greatest possible quantity of food from a limited space of ground. This necessity, then, I think, will justify the adoption of the following, perhaps more useful, rule, viz. never to suffer a square yard of ground to lie a day idle during the growing season.* The remaining 40 rods of garden ground may be managed as directed for 20 rods, growing, of course, more potatoes and cabbages in proportion than any thing else.†

Rabbits never thrive well unless they are kept dry, and have plenty of food, such as clover, ribgrass, lettuces, dandelions‡, sowthistle, &c. &c., indeed, almost any thing; but a few oats should be frequently given them in a little dry trough. These little creatures devour a prodigious quantity of food, considering their size, and certainly would never pay for keeping; but, in a family, nothing can be better amusement for a parcel of boys than to cater for their rabbits. They are excellent eating, and very prolific, if well attended to, but every thing depends on that.

Pigeons I would rather keep for their companionship's sake than for profit: every little extra tie or enjoyment makes a man's home dearer to him.

Having now gone over all the subjects I proposed to consider, I have nothing further to add, save that the *time* that I would allow to mow the grass, rick the hay, and cultivate the ground, should not, on any consideration, exceed a week, viz.: — 1 day (two halves) to mow and rick; 3½ days to dig the ground, and sow the mangold wurzel seed; half a day to clear, dig, and plant 2 rods of ground with early potatoes; half a day to clear and pit the remainder of the mangold wurzel.

All the other cleaning, digging, cropping, &c., most assuredly ought to be done, but always, be it understood, with the assistance of his children, by himself at nights and mornings. His wife will have enough to do to manage her household affairs, her dairy, her pigs and fowls, and milking the cow, and with the help of the boys foddering her too.

* This is most important advice; and on it, on pronging well, whether there are weeds to destroy or not, and on diligently collecting and preserving both solid and liquid manure, will depend much of the cottager's success. — *Cond.*

† *Symphytum asperrimum*, a native of Siberia, and one of the most rapid-growing of herbaceous plants, has been recommended for culture as food for cows. (*Gard. Mag.*, vol. v. p. 442.) This vegetable is full of mucilage; and we certainly think it deserves to be tried by every cottager who can procure plants. It seeds freely, and propagates most readily by division of the root. We would strongly recommend gardeners to gather, propagate, and distribute it. — *Cond.*

‡ *Succory*, or wild endive, forms excellent food for rabbits; the tops, blanched, either by covering with pots, or by planting in sand in a cellar, make an excellent spring salad, much used in Germany (*Gard. Mag.*, vol. ii. p. 460.); while its roots, and also those of the dandelion, form one of the best substitutes for coffee. Dr. Howison of Edinburgh prefers dandelion coffee to that of Mecca; and many persons, all over the Continent, prefer a mixture of succory and coffee to coffee alone. Dig up the roots of dandelion, wash them well, but do not scrape them; dry them, cut them in bits the size of peas, and then roast them in an earthen pot or coffee-roaster of any kind, and grind them in the coffee-mill, or bruise them in any way. The great secret of good coffee is to have it fresh-burnt and fresh-ground. — *Cond.*

And now, Sir, before I transmit these remarks to you, allow me to state that I have recommended nothing which I have not either practised myself or seen others practise with success. Still I am aware that many, very many people will most conscientiously differ from me in opinion; for, after all, the truth may be, that

“ The difference is as great between
The optics seeing, as the objects seen.”

I am, Sir, yours, &c.

Jan. 23. 1830.

A PRACTICAL GARDENER.

ART. IV. *On the Extent and Culture of Cottage Gardens, the live Stock of the Cottager, and various Points of Cottage Economy, with reference to the Hints for Prizes for Papers on the Subject.* (Gard. Mag., vol. v. p. 713.) By J. P.

Sir,

It is with the highest degree of pleasure that I have read the pages of the last Gardener's Magazine which are devoted to the most truly philanthropic and benevolent purpose of ameliorating the condition of the labouring classes of society, which we see, year after year, becoming more oppressed and degraded, and which will yet sink deeper into degradation and moral depravity unless some timely means be devised to enable the agricultural labourer to support himself and family without parochial assistance; for we see the paupers of every parish yearly increasing; and it is the opinion of the most experienced farmers that, in a little time, the land will not be able to support the poor, and the poor's rate must be paid whether the landlord gets his rent or not. The farmers say, “Relieve us from the poor's rate, and we can live and pay our rents.” But how is that to be effected? By nothing but improving the condition of the labouring classes; by letting them have a portion of land to raise a sufficient quantity of vegetables, and to supply them with the most common necessities of life, of which, at this present time, there are thousands of fellow-creatures that have barely sufficient to support the cravings of nature; or else submitting to the most servile degradation, quite revolting to the feelings of a civilised people [the work-house?].

Every landlord that can devise any plan for the benefit of the poor, who are dependent on his tenantry, ought to lose no time in bringing it forward; and every one that can suggest any means to better the condition of his starving fellow-mortals, ought to come forward boldly and avow his sentiments: for it is certain that something must be done very soon (ere it be too late). This has caused me to commence writer; and, though I am unable to transmit to you elegant compositions, yet what I do write shall be founded on truth, either from facts which have come under my own observation, or from the enquiries that I have made among labourers on whom I can depend for the veracity of their information. The vegetables that I shall recommend are those which are generally found in cottage gardens: their culture as simple as is consistent with good management to insure a crop; for I conceive that the knowledge of the agricultural labourer is not yet sufficient to appreciate the value of any new vegetable, or any new mode of culture. I therefore wish to give him the best methods which I have seen and practised myself of cultivating the vegetables in common use; and, as he improves in mental knowledge, and in the management of his garden, any new vegetable may be recommended to him, as he will then be able to perceive the benefit likely to result from its culture. A

multiplicity of new names, and long directions, would not only puzzle and perplex the illiterate labourer, but quite discourage him from ever venturing on the management of a garden.

I shall now endeavour to answer the three questions you have proposed (*Gard. Mag.*, vol. v. p. 714.), in as brief a manner as I possibly can.

I. What Quantity of Land will keep a Family in Culinary Vegetables and Pork and Eggs?

The quantity of land requisite for the above purposes depends on soil, situation, and climate; but, in answering all the three questions, I shall suppose the land to be of a light sandy loam, upon a dry bottom, in an open situation; worth from 15s. to 20s. per acre at the present time, and in the county of Kent, about 20 miles from London. The plan which I subjoin is rather more than a quarter of an acre, which I think sufficient for a man, his wife, four children (the children's ages being from 10 to 2 years), and two pigs and two hens.

No. 1. *Potatoes and Radishes*, 19 yds. long by 4½ yds. wide. Quantity of seed, and price: 2 gals. potatoes, 6d.; radishes, 1d.

In the last week of February, take 6 barrows of manure, spread it regularly over the ground, and commence digging at one end for 1 foot. Then stretch the line across the border, and cut down a trench 3 in. deep, and plant the early frame potato at 9 in. distance, in the row; then dig again for 18 in., set the line, make a trench, and plant as before. Continue this for 7

Plan 1. 35 yards by 40.

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yards; then dig and rake the remaining 2 yards, and sow the short-topped radish, which may all be done in 6 hours; or in 3 days, at 2 hours each day. The potatoes will require hoeing in the beginning of May, half an hour; earthing up in the middle of the month, 1 hour. They will be ready for use by the end of May, and will serve the family until the end of August. Radishes ready in April.

No. 2. *Early Peas and Beans*, 18 yds. by 4½ yds. Peas, 3 pts. 1s.; beans, 1 pt. 2d.; pea-sticks, 6d.

In the beginning of January dig all the ground, and then sow 14 yards with early frame peas, at 3 ft. from row to row, and the remaining 4 yds. with Mazagan beans, in rows 1½ ft. asunder, taking 4½ hrs. work. They will require twice earthing up: first in February, then in March, a quarter of an hour each time. The peas must be stuck in March, which will take half an hour. After that, they will only require being kept clear of weeds, and will be ready for use from the latter end of May to the end of July.

No. 2. a I reserve for sowing small seeds, as shall be afterwards explained.

No. 3. *Early Barnes Cabbage*, 9 yds. by 11½ ft.

In the middle of October spread regularly 4 barrows of manure, and let it be well dug, which will take 3 hrs. work; then plant in rows 1½ ft. asunder,

and 1 ft. in the row, 200 plants, half an hour's work. For the raising of the plants, see No. 2. a.

No. 4. *Dwarf Marrow Peas and Windsor Beans*, 9 yds. by 11½ ft. Peas, 1 qt. 8d.; beans, 1 pt. 2d.; pea-sticks, 6d.

In the middle of February, dig and sow 2 rows of dwarf marrow peas, 4½ ft. distant; and 2 rows Windsor beans, 2 ft. distant, 1½ hrs. work; earth up and stick the peas the beginning of April, 1 hr. They will be in use from the end of July to the beginning of September.

Nos. 5, 6, 7, and 8. must have 6 barrows of dung, and be well dug in the beginning of March, 4 hrs. work.

No. 5. *Onions*. 1 oz. seed, 6d.; produce, 2 bushels; 27 ft. by 5 ft.

Rake it level; then stretch the line, and draw drills half an inch deep, and at 6 in. distance. Sow the seed; then rake it gently over, 1 hr. work. When the seeds come up, and are fit for eating, thin them out to 3 in. distance; keep clean all summer: they will be ready for pulling up the latter end of August.

No. 6. *Prickly Spinage*, 6 ft. by 27 ft. 1 oz. seed, 2d. Ready in June.

Rake the ground even, and sow broad-cast in March, half an hour; after they are come up, thin out to 4 in. every way, and keep clear from weeds.

No. 7. *Early Turnip, and Bath Cos Lettuce*, 7 ft. by 27 ft. Seed, turnip, 1d.; lettuce, 1d.

Rake it level, and sow at the latter end of March, half an hour's work. Thin the turnips in April to 9 in.: they will be ready in May. Thin the lettuce in May to 9 in., and they will be ready in June. They must be kept clear of weeds.

No. 8. *Scarlet Runners*, 30 ft. by 9 ft. 1 pt. seed, 3d.; sticks, 6d. Ready in July, and in season till destroyed by frost.

Lightly dig the ground in the beginning of May, and plant 2 rows of scarlet runners at 3 in. distance in the row, 1 hr. work; earth up and stick when 3 in. high, half an hour.

Nos. 9. and 10. Dig in January and February, which will take 10 hrs.

No. 9. *Parsneps*, 6 yds. by 9 yds. Seed, 2d. Ready for use in October. Sow in February, in drills 1½ ft. asunder, and 1 in. deep, 1 hr.; keep clear from weeds, and they will be ready to take up in October, 2 hrs. work. Produce, 4 bushels.

No. 10. *Carrots*, 14 yds. by 9 yds. Seed, 4d.; produce, 12 bushels.

Lightly dig the ground, and sow in drills 1 ft. distance, and half an inch deep, the first week of March, 2 hrs. work. Thin out where too thick, from 4 to 6 in. distance; keep clear from weeds, and they will be ready to take up in October. Then they must be taken, with the parsneps, into the open shed, and covered with straw, to exclude the frost, 3 hrs. work. From **d to c** plant a row of gooseberries, red, black, or white currants, as each of these will be useful in summer for pies or puddings.

No. 11. *Barley*, 19 yds. by 20 yds. Seed, 1½ gal. 1s. 3d.; produce, 4 bush.

The ground must be well dug in November, 12 hrs. work; then let it lie until the last week of March, when it must be lightly dug, and the barley sown in drills, 6 in. distance, and 1 in. deep, 6 hrs. work. After it has been up three weeks, it must be rolled or beaten with the spade, 1 hr. Nothing more will be wanted till hoeing-time, which may be performed in 1 hr. It will be ready for reaping in August, 2 hrs. If the weather be unfavourable, take into the shed to dry; thresh in October, 5 hrs.

No. 12. *Potatoes*, 19 yds. by 15 yds. Seed, 1 bush. 1s. 6d.; produce, 25 bush.

Dig the ground in December, 10 hrs. work. Let it lie until the first week of April; then spread 8 barrows of manure on it, and commence lightly digging at one end of the piece. Stretch the line at 1 ft. from the edge; cut down a trench 4 in. deep, and plant the potatoes. Then dig for 3 ft. more, set the line, and make a trench, and plant as before; and so on to the end

of the piece, 7 hrs. work. About the latter end of May they will require hoeing, 2 hrs. In a fortnight they must be earthed up, 1 hr.; and the final earthing a fortnight afterwards, 1 hr. They must be kept clear of weeds until October, when they will be ready for digging up, 8 hrs. To keep potatoes, make two holes, 1 ft. deep and 4 ft. diameter, which will hold 8 bushels each; lay some straw over them; then cover up with soil $1\frac{1}{2}$ ft. thick. The remaining 9 bushels may be put in the shed, and covered with straw for use.

No. 13. *Sugarloaf or large York Cabbage*, 19 yds. by 5 yds.; 220 plants. For the raising, see No. 2. *a*.

Dig well over in December, 2 hrs. work; then, in March, lightly dig in 3 barrows of manure, 2 hrs. work. Plant in rows 2 ft. distant, and $1\frac{1}{2}$ ft. in the row, 1 hr. Earth up in April, half an hour. They will be ready in July.

Nos. 14. to 20. must be well dug in January, 4 hrs. work; then, in March, they must be planted in beds with chamomile, hyssop, sage, marjoram, and chives, which will be all useful as pot or medicinal herbs. Nos. 19. and 20. must be planted with balm and spearmint, which will serve as substitutes for tea in the winter months.

No. 21. *Mercury* (*Chenopodium Bonus Henricus*), as a perennial spinage, will be found exceedingly useful. The roots may be taken out of the fields in September, and planted, 1 hr.; and they will yield a sufficient supply the next spring, and throughout summer. The other herbs must be planted in the beginning of April, 3 hrs.

No. 2. *a*, as before mentioned, is reserved for raising seedlings, &c. In the last week of February, sow about 2 sq. yds. of Savoy cabbage, a quarter of an ounce; likewise 2 yds. of green curled borecole, or Brussels borecole, a quarter of an ounce, 1 hr. work: and as the potatoes come off No. 1., the Savoy and borecole may be planted in rows 2 ft. asunder, in July or Aug., 2 hrs. work. Then sow in No. 2. *a*, in the first week of August, half an ounce of early Barnes cabbage, 6d.; transplant in any vacant piece of ground, in September, at 3 in. distance every way, 1 hr.; there to stand till finally planted in October in No. 3. Likewise, about the middle of August, sow half an ounce (6d.) of the large York or large sugarloaf cabbage, and transplant in September, 2 hrs., in any vacant ground, where they will have to stand till March, to be planted in No. 13.

Leeks. — Sow in *a* No. 2. half an ounce of leek (2d.), in March, half an hour; for transplanting into No. 7. after the turnips have come off, 1 hr. A little lettuce may be sown, to transplant in May or June, and will be ready in August and September.

Cucumbers. — In the first week of May, between three of the rows of peas No. 2., dig a small place, 18 in. wide, and put in 8 or 10 cucumber seeds, which will come up and be sheltered with the peas, and, when the peas come off, will be fit for fruiting.

I have now gone through the cropping and routine culture for one year. The next years of cropping must be changed as in plans Nos. 2. and 3.; and, by so doing, a regular succession and rotation of crops will be maintained through the ground, always giving the same kind of culture to each individual crop, which I have pointed out, in every quarter of the garden.

Manure. — Every exertion must be used to collect manure; that from the hogs will be the best, and must be applied to the poorest ground. All the weeds and litter of the garden must be laid in a heap to rot, and any scrapings of roads that can be collected, and all the ashes burnt in the house must be taken care of, as every kind of manure will be found useful and beneficial.

Hoeing, weeding, and gathering the Vegetables must be done by the wife and children; for which I shall not account, as every hour that is to spare may be devoted to some useful purpose in the garden.

Hogs. — Some time in May two hogs must be got, which may be bought

. each ; and, the wash of use, cabbage- from No. 3., of spinage, potatoes, &c. may be kept as sugarloaf is ready in with which, small po- , tops of the s, and all the not wanted, will be kept in good condition till the latter end of the year. Then they must be used as fol-

Plan 2. Second year's cropping.

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COTTAGER'S GARDEN CALENDAR.		
	July.	August.
June.		

[illegible][illegible]

Having thus provided him with vegetables, pork, and eggs, I shall next calculate his other expenses as moderately as possible.

	£	s.	d.		£	s.	d.
House and garden rent, per annum	3	12	0	Then suppose a labourer's wages at 12s.			
Taxes, rates, &c. upon do.	0	9	0	per week	31	4	0
Coals and wood	3	0	0	His wife in hay time, harvest, &c., 16			
Tea	0	18	0	weeks at 5s. per week.	4	0	0
Sugar	1	10	0				
Butter	1	12	0				
Bread, flour	11	10	0				
Milk	0	12	0				
Salt, pepper, soap, &c.	1	5	0				
Man's shoes, clothes, &c.	3	0	0				
His wife's do.	2	0	0				
Children's do.	5	0	0				
	£34	8	0				
				Annual expenses	35	4	0
				leaving a balance of	£0	16	0

I have not accounted for the garden seeds, nor for the price of the hogs when bought; but a few vegetables may be sold, to balance the seeds, and the heads, hearts, &c. will balance the hogs' price.

By the above it is seen that nearly every farthing of a labourer's wages is expended without being able to procure one morsel of animal food. So how is it possible for the labouring class to live, as they are at present situated? They cannot! They must starve! I am convinced that the only plan to strike effectually at the root of the evil, and to raise the labourer from his present degradation, is to allow him a small allotment of land, which, as above shown, will produce him vegetables, pork, and eggs; and these, with his earnings, will just be sufficient to maintain his family, and render him once more a faithful and productive member of society.

II. What quantity of land is sufficient to maintain a family with pork, vegetables, eggs, and milk?

Plan 4. contains 2 acres: the part *a*, one fourth of an acre, to be cropped the same as *Plan 1.* &c., except the sugarloaf cabbage, for which there will be no necessity in that place; *b*, for green food for cow; *c*, the pasture for the cow; and *d*, the meadow for winter food.

Directions for cropping *b*.

No. 1. *Sugarloaf, or large York Cabbage*, 11 yds. by 35 yds. Seed 1s.; produce, 23 cwt. Manure with six barrows of manure, and dig the ground in January, 12 hrs. work; plant in February (having previously raised the plants in *a*, No. 2., as directed for first class, which part must be a little enlarged), at 1½ ft. distance in the row, and 2 ft. from row to row, 1100 plants, 2 hrs. work. Earth in March, ½ hr.; April, ½ hr. They will be ready in the middle of July, when they must be cut, and taken into the pasture (*c*): beginning with a small quantity, and increasing as the pasture decreases.

No. 2. *Turnips*, 24 yds. by 17. Seed, 2d.; produce, 26 cwt. Dig in March, 12 hrs. work. Let it lie until the 20th of June, then lay on six barrows of manure, dig it lightly in, then sow 3 oz. of Tankard or Norfolk turnip, 7 hrs. work; hoe in July, 1 hr.; the same in August, 1 hr. Ready in November.

No. 3. *Drum-headed Cabbage*. Seed, 1½ oz., 1s.; produce, 2 tons. The seed must have been sown in *a*, No. 2., the latter end of August, ½ hr., and transplanted in October, 1 hr. Sometimes the severity of the winter may destroy part of the cabbage plants; then sow again in the beginning of February, which will be ready for planting in May. Dig the ground well in February, 12 hrs.; then lay on six barrows of manure about the middle of April, lightly dig and plant, 6 hrs; earth up in May, ½ hr.; the same in June, ½ hr. Keep clear of weeds all summer, and they will be ready for use in February, and till May.

Rotation of Crops. — After having given the rotation of crops of *Plans 1, 2, and 3.*, it is unnecessary to say much more; but the crops as they stand in *Plans 1, 2, or 3.* of the first class, and in *a* of the second class, *Plan 4.*, may be removed to *b*, *Plan 4.*, by beginning with the barley, *a*, into 1. *b*, when 2. *b* will be removed to 3. *a*, and 3. *b* into *a*; and so a regular succession and rotation of crops may be obtained.

Pasture Ground, c, half an acre.
The cow to be turned in on the 12th of May, where there will be a sufficiency until the middle of July; then the sugarloaf cabbage must be begun with by cutting and giving them as the eatage of the pasture requires. They will continue until the 1st of October. There will be plenty of dung on the pasture ground.

Meadow Ground, d, 1 acre, produce 2 tons. About 20 barrows of dung must be laid upon one third of the meadow ground every year in January, 4 hrs. work. Mowing may be begun in July, 12 hrs. work. The time of getting the hay depends on the weather, but to average one year with another, three days for the man, wife, and children will be sufficient; stacking, 1 day; thatching, $\frac{1}{2}$ day. Turn the cow into the rowen on the 1st of October, till the severity of the season obliges you to take her into the house, when the turnips will come into use; but as long as open weather continues turn her out in the day time, giving in the field about 40 lbs. of turnips each day, and about 4 lbs. of hay in the night time,

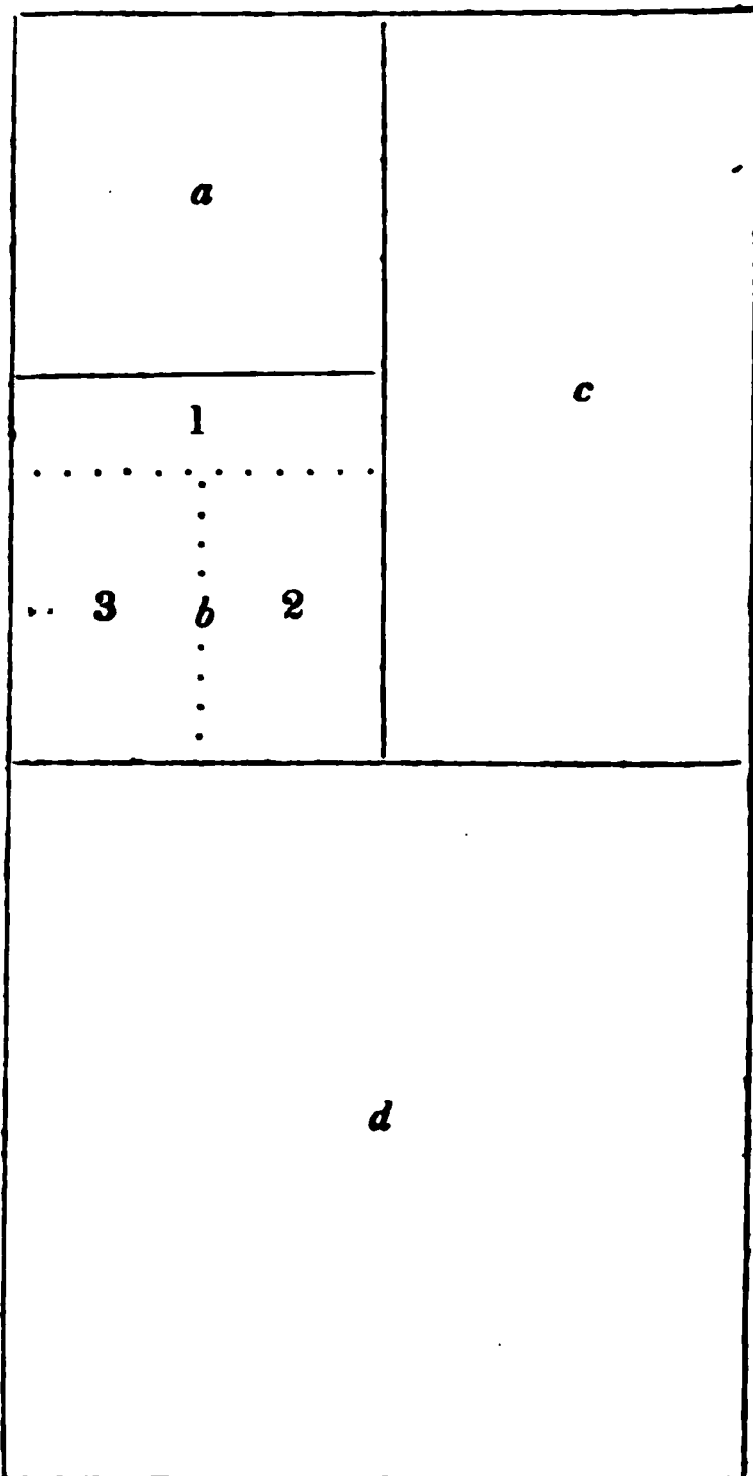
till she must be taken entirely into the house; then she must have 14 lbs of hay, and 70 lbs of turnips each day and night. After the turnips are done, begin with the drumhead cabbage, at 50 lbs. each day, with 18 lbs. of hay, increasing the quantity of hay and lessening the quantity of cabbage as the cow is getting dry, which will be about the middle of March; then let her have from 25 to 30 lbs. of hay each day, until she calves, in the latter end of April; she must then have plenty of hay, and the remaining part of the cabbage, until she is turned into the pasture on the 12th of May. The calf may be suckled ten weeks, and then it will be worth about 4*l*.

Breed of Cows. — I think the most profitable breed for cottagers is the Scotch or Irish, as they are more hardy, and can live upon coarser food than the higher breeds of cattle can. Their milk is rich, and yields a quantity of cream, and they are never dry so long as the larger breeds, which makes them the more valuable to a poor man. The Alderney gives a great quantity of milk, and exceedingly rich cream, but are not hardy, and they require very good food, which makes them unfit for a cottager, except in the most southern parts of the kingdom.

Hogs. — The same as cottagers of the first class. There will, in this case, be skimmed milk, which will keep them in better condition.

Hens. — As there are all the advantages of the first class, together with more dunghill, the cowshed, stackyard, &c., three hens may very well be kept; which will lay about 200 eggs in the year, part of which may be sold. But for further elucidation, I subjoin a tabular summary of the whole.

Plan 4. 40 yards by 140 yards.



COTTAGER'S HUSBANDRY CALENDAR.

Catalogue of Vegetables, &c.	January.		February.		March.		April.		May.		June.		July.		August.		Sept.		Oct.		Nov.		Dec.		Produce.	
	work.	h.	work.	h.	work.	h.	work.	h.	work.	h.	work.	h.	work.	h.	work.	h.	work.	h.	work.	h.	work.	h.	work.	h.		
From Class 1.	-	18 1/2	-	15 1/2	-	12 1/2	-	11 1/2	-	6 1/2	-	3 1/2	-	-	-	9	-	14	-	30	-	18	-	12 1/2	-	Veg., pork, & eggs, all the year.
Sugarloaf cabbage	-	dig	-	plant	-	earth	-	earth	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	To be cut in July & Aug.
Turnip	-	-	-	dig	-	dig	-	dig	-	dig	-	dig	-	-	-	1	-	1	-	-	-	-	-	-	-	To be cut in Nov & Dec.
Drumhead cabbage	-	-	-	-	-	-	-	dig pit	-	earth	-	earth	-	-	-	-	-	-	-	-	-	-	-	-	-	To be cut in Nov & Dec.
Pasture	-	-	-	-	-	-	-	-	-	turn. in	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Do. winter and spring.
Meadow	-	man.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Do. with cabbage till October.
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Do. alone or with cabbage, &c.
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Milk, per meal	-	2 qts.	-	1 quart	-	1 pint	-	-	-	7 qts.	-	8 qts.	-	8 quarts	-	6 qts.	-	4 qts.	-	3 1/2 qts.	-	3 qts.	-	2 1/2 qts.	-	Breakfast and supper for family
Butter, per month	-	8 lbs	-	4 lbs.	-	1 1/2 lbs.	-	-	-	5 lbs.	-	5 lbs.	-	30 lbs.	-	26 lbs.	-	16 lbs.	-	13 lbs.	-	11 lbs.	-	11 lbs.	-	Allowing 43 lbs. for family.

EXPENSES.

House, Garden, and Land
Taxes and Rates upon do.
Fuel
Tea
Sugar
Bread, Flour
Salt, Pepper,
Soap, Candles, &c.
Man's Clothes, &c.
Wife and Children, &c.
Garden

\$	6	0	0
0	15	0	0
3	0	0	0
0	8	0	0
1	0	0	0
11	10	0	0
0	14	0	0
1	0	0	0
3	0	0	0
7	0	0	0
0	13	4	
<hr/>			
\$	35	0	4

RECEIPTS.

Wages, at 12s. per week, deducting one week for extra labour	-	-	-	£	20	19	6	
Wife, two months	-	-	-	-	2	0	0	
Butter sold at 1s. per lb.	-	-	-	-	5	0	0	
Calf	-	-	-	-	4	0	0	
Eggs	-	-	-	-	0	6	8	
<hr/>								
Deduct expenses	-	-	-	-	41	19	8	
Leaves a balance of	-	-	-	-	35	0	4	
<hr/>								
	-	-	-	-	£	6	18	10

Abbreviations. — h. hours ; qts. quarts ; dg. dig ; pit. plant ; so. sow ; turn. turn in ; tripit. transplant.

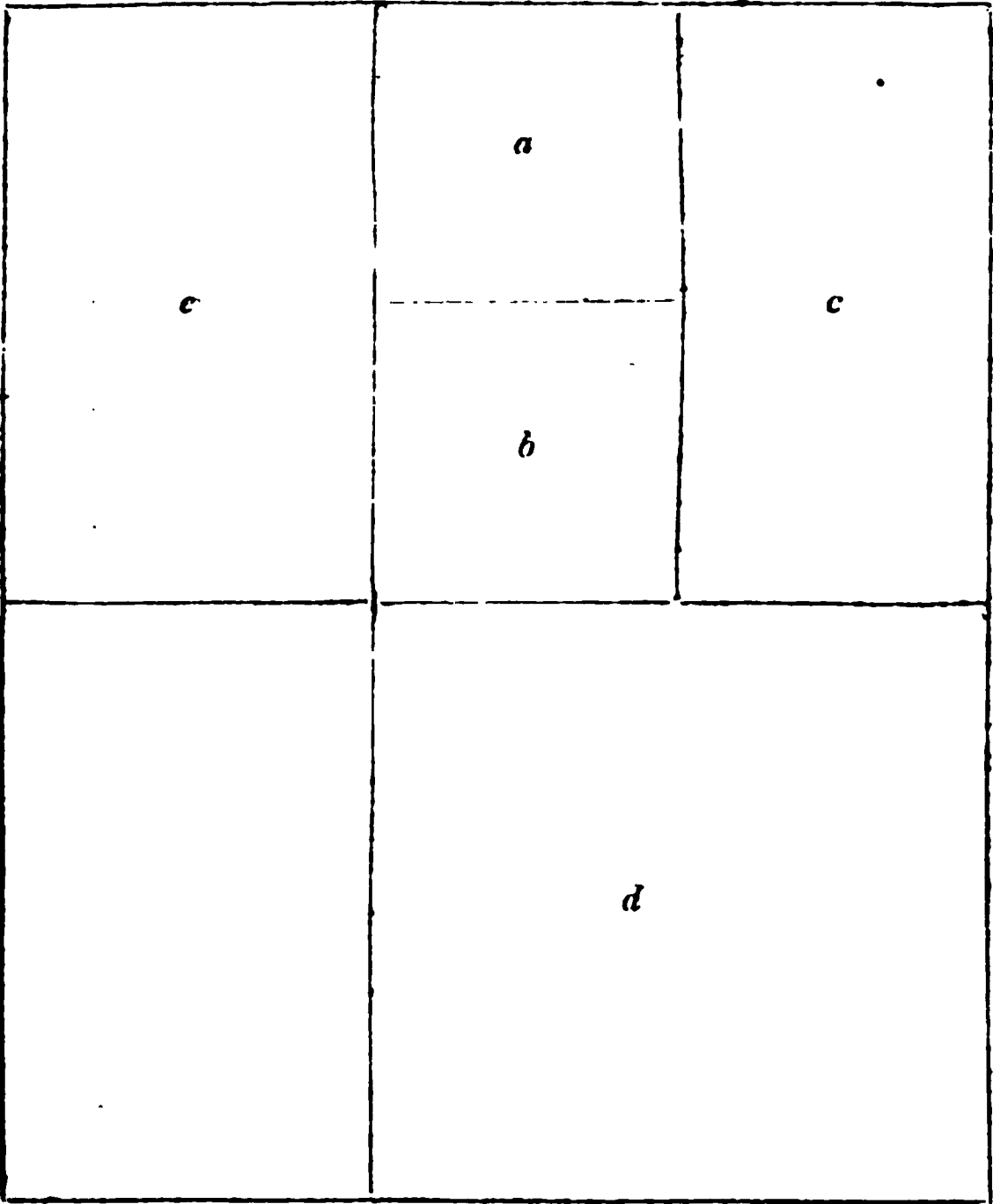
By the above calculation, the labourer of the second class is provided with vegetables, pork, eggs, and milk for his family throughout the year, and has a balance over expenses of 6*l.* 18*s.* 4*d.*, being 6*l.* 2*s.* 4*d.* more than the first class, which makes him a more profitable and productive consumer. Thus, if 1000 such were established in any one county, and to lay out each on an average 3*l.* (putting the remainder in the savings bank for old age), 3000*l.* more would be in circulation in that part of the country, as it would be laid out in extra food and clothing amongst the small tradesmen, who always keep the money in circulation from one to another; which, I presume to assert, would do more real good to the country than 20,000*l.* paid to a landlord or a merchant, who perhaps has nothing else to do with it but lay it up in his coffer, or put it in the bank and receive the interest, where it continues accumulating without ever being above 1 per cent value to the public.

III. *How much land will maintain a family with pork, vegetables, eggs, milk, and bread corn?*

A quarter of an acre of land added to the cottager's of the second class, will be plenty for supplying him with the above necessaries. The arrangement is shown in Plan 5.

Plan 5. *c*, *Autumn Wheat*. 5 pecks, 8*s.*; produce, 15 bushels. Dig in May, 40 hrs. Let it lie until the last week of September; then light dig and

Plan 5.



sow in drills 6 in. distant, and 1 in deep, 5 pecks of corn, which may be done in 25 hrs. It must be well rolled in March, 2 hrs.; then in May it will re-

quire hoeing, 4 hrs.; after that it will want no more until ready for the sickle in August.

f, Spring Wheat. 6 pecks, 9s. 6d.; produce, 15 bushels. Dig in November, 20 hrs., and December, 20 hrs., then let it lie till the last week of March; then dig, rake, and sow broadcast 6 pecks of spring wheat, 20 hrs.; roll in April, 2 hrs; weed in May, 5 hrs; nothing more will be wanted till August, when the reaping of both *e* and *f* must be commenced, if ripe; which, by the man, his wife, and children, may be done in two days, or 24 hrs. If the weather be unfavourable, take into the open shed to dry. An open shed I consider of primary importance to the cottager; for, if the weather is unfavourable for one week after he has cut his corn, his subsistence for the next twelvemonth is entirely wasted; therefore give me leave again to recommend to you, in your proposed plans of cottages, not to omit this most useful of buildings. Threshing may be performed at three different times, viz., September, 16 hrs., December, 16 hrs., January, 16 hrs. Keep some straw for the thatching of the haystack, and the rest may be sold, which will pay for the expense of the seed; or lay it out in dung, which, I think, will in the end be most profitable.

Rotation of Crops. — In the second year the crops of *a* and *b*, with the culture directed, must be removed to *f*, and *f* to *e*, and *e* to *a* and *b*, and the third year remove round again, so that in the fourth year it will be again the same as Plan 5, by which rotation good crops may be produced.

Hogs. — Exactly the same as classes first and second, which see.

Cow. — As class second, which see.

Hens. — More advantages are presented to this class for fowls than either of the others; therefore four hens and one cock may be kept, and a brood of chickens may be raised every year, which will sell for 18s. Produce of eggs, 230, of which 100 may be sold, 8s. 4d.

From *g* to *h* may be planted a row of gooseberries or currants.

By the following table it will be seen, that as the labourer's comforts and means of getting his livelihood are increased, he will become a more profitable member of society; for, as I have shown in class second, the benefits resulting from keeping a cow are still greater if he can grow his bread corn. As appears from my calculation, there is 13l. 19s. 10d. at the disposal of a labourer of the third class; so if 1000 of these were established in any part of the country, and were only to spend 5l. a piece, it would be 5,000l. more in circulation in that part of the country; and then if the remaining 8l. 19s. 10d. were lodged in a savings bank every year, it would entirely free the parish from this class, when they were no longer able to cultivate their land, or earn their bread; they would have an independency of their own, gained by their own industry.*

* It would thus appear that a man in possession of $2\frac{1}{2}$ acres of land, by bestowing on it 186 hours of labour in the course of the year, may maintain himself and family. This labour, with the exception of 3 weeks, our correspondent proposes to be wholly performed as a recreation during leisure hours. We scarcely think he has allowed time sufficient; but if the object can be attained with so small a quantity of land, and even double the number of hours' labour, it affords a gratifying prospect of the comforts and enjoyments that humane and sympathising landlords in Europe might confer on their labourers and mechanics, and of what emigrants to America and Australia may look forward to for themselves and their children for an indefinite number of generations. It is useful to view such an important subject as the prospects of the labouring, or what always has been and always will be the very lowest, class of society, in every possible way. —
Cond.

TABULAR ABSTRACT OF THE THREE CLASSES.

	January.		February.		March.		April.		May.		June.		July.		August.		Sept.		Oct.		Nov.		No. of hours.	Annual expenses.	Animal feedings.	In hand for necessities.
	work.	h.	work.	h.	work.	h.	work.	h.	work.	h.	work.	h.	work.	h.	work.	h.	work.	h.	work.	h.	work.	h.				
1st Class	-	184	-	154	-	124	-	114	-	64	-	34	-	2	-	44	-	14	-	20	-	12	120	54 0 0	4 5 2	
2d Class	-	16	-	14	-	12	-	61	-	71	-	74	-	67	-	9	-	3	-	-	-	-	128	34 0 0	4 0 16 0	
3d Class	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	128	35 4 0	4 1 9 6 15 9	
Autumn Wheat	-	-	-	-	-	roll	9	-	dig	40	-	-	-	-	-	-	sow	25	-	-	-	65	25 2 8	4 10 2	13 19 10	
	-	thresh	16	-	-	-	-	-	hoe	4	-	-	-	-	-	-	thresh	16	-	-	thresh	16	6	-	-	
Spring Wheat	-	-	-	-	-	sow	20	roll	weed	6	-	-	-	-	-	-	-	-	-	-	dig	20	67	-	-	
	-	504	-	394	-	47	-	203	-	564	-	11	-	48	-	54	-	444	-	20	-	32	456	-	-	

EXPENSES.

House and Land Rent	£	s.	d.
Rates, Taxes, &c.	-	7	10 0
Fuel	-	0	18 0
Tea	-	3	0 0
Sugar	-	0	8 0
Grinding of Corn	-	1	0 0
Seed Corn	-	0	15 0
Salt, Pepper, Cassias, &c.	-	0	17 6
Clothes, Shirts, &c.	-	1	14 0
	-	10	0 0
	£	28	2 6

RECEIPTS.

Labourer's Wages, at 12s. per week, allowing three weeks at home	£	s.	d.
Wife, one month's work	-	1	0 0
Calf	-	4	0 0
Butter	-	6	0 0
Chickens	-	0	18 0
Eggs	-	0	8 4
	£	40	2 4
Deduct Expenses	-	11	19 10
	£	28	2 6

But perhaps you may now say that I have made every thing appear easy and plain, without any difficulty attending it, but still how is it at all to be effected? You have not proposed the question, but I beg leave to give my opinions by answering it.

It is practicable in two ways, by landholders and by parishes.

1. *By Landholders.* — It is in the power of landholders to effect the present plan of amelioration, without any loss, and in the end a real gain of property; and they would be also rewarded by seeing an increase of industry and a decrease of crime upon their demesnes. But to the plan; suppose a landholder has 40 acres of good arable meadow land, that he is letting at 15s. per acre, that is 30*l.* per annum; I will show how to make something more of his property, for

				£	s.	d.					£	s.	d.									
Six cottages of the 1st class might be built at 55 <i>l.</i> each							-	390	0	0	Then the rental of 1st class							-	-	21	12	0
2d class, at 65 <i>l.</i> each							-	390	0	0	Do. 2d class							-	-	36	0	0
3d class, at 70 <i>l.</i> each							-	420	0	0	Do. 3d class							-	-	45	0	0
											</											

per annum for the interest of 1140*l.*, which is above 6 per cent for the money laid out, and the advantages to his tenantry will be incalculable.

2. *By Parishes.* Upon an average, the different parishes in this part of the country are paying 5s. per pound poor's rate; so, if a parish is assessed at 4000*l.*, they are paying 1000*l.* annually for the regular weekly and casual relief of the poor, which I shall divide into six classes, in order to give a clear elucidation of my plan, viz. —

	£	s.	d.		£	s.	d.	
10 families at 10s. per week	260	0	0	3 families at 10s. per week	78	0	0	
10 do. at 8s. per week	208	0	0	3 do. at 8s. per week	62	8	0	
10 do. at 6s. per week	156	0	0	3 do. at 6s. per week	46	16	0	
10 do. at 4s. per week	104	0	0	3 do. at 4s. per week	30	14	0	
10 do. at 3s. per week	78	0	0	3 do. at 3s. per week	23	8	0	
10 do. at 2s. 6d. per week	68	0	0	3 do. at 2s. 6d. per week	19	10	0	
	<hr/>				<hr/>			
60	874	0	0		Saved	260	16	0
	126	0	0			874	0	0
For casual expenses	<hr/>					<hr/>		
	£1000	0	0			613	4	0
	<hr/>				Casual Relief	126	0	0
						<hr/>		
					First year's assessment	739	4	0
						<hr/>		

To demonstrate the above still more clearly, suppose a parish were to take a long lease of 40 acres of land for 30*l.* per year, and to borrow, at as low an interest as they could, 1140*l.*, for the building of eighteen cottages; that they were to place three families out of each of the ten in my first statement; by their removal from the parish books, the assessment would be reduced 260*l.* 10s., as shown in statement 2., making the assessment only 739*l.* 4s., which would only be 3s. 9d. in the pound instead of 5s. The profits of the parish would be as follows: —

	£	s.	d.	£	s.	d.
Ground rent	-	30	0			
Interest at 4 per cent of 1140 <i>l.</i>	-	45	12			
					75	12
						0
Rental of cottages	-	102	12			
Reduction of rates	-	260	16			
					363	8
						0

By the annexed calculation, the parish is enabled to pay the rent and interest of building money, and has 75*l.* in hand, which, with the 260*l.* reduction in the rates, would save 287*l.* annually; and I have no hesitation in saying, were either of these plans acted upon, the rates would soon get much lower; so, ultimately, the demand for labour would be greater, and wages would be higher, and the poor's rate would only have to be levied

for relief in sickness, infirmities, and old age; or, as they were originally intended, when first enacted in the reign of Queen Elizabeth, for the impotent, blind, and those who were not able to work.

I have now answered all your three questions, in as clear and comprehensive a manner as I am able, and am ready to attest the truth of what I have written; for I have given the cultivation of each individual crop which I have practised and found to answer. The different items of expenditure I have been furnished with by labourers chiefly on my employer's estate, whom I can depend upon, as being as economical a calculation as it is possible for a family to be supported with. But, for a cottager, I would always recommend the land to be of a good quality. It is of no use putting a cottager upon a common, where the produce will not pay for the labour. The experiment has frequently been tried, but has always failed of the anticipated results; and such experiments have deterred improvement in the lower classes. But give them land that will reward their labours; it will stimulate their industry, check their immorality, and ultimately tend to link each class of society in inseparable bonds for the preservation of national order and tranquillity throughout our favoured isle.

As the cottagers may not be able to purchase the implements of husbandry, nor the second and third classes their cows, I should say, let the landlord or parish lend them the money, and each class will be able in three years to pay off the debt.

I entirely agree with your plan of national education, but it will not be accomplished in the present age; but the sooner it is begun the better, as it will have many difficulties to encounter, before it can be permanently fixed.

January 22. 1830.

J. P—.

ART. V. *An Essay on Cottage Gardens, with reference to the Prize Question in the Gardener's Magazine.* By the COTTARMAN'S FRIEND.

To contribute in any way to the real comforts of the labouring classes, or to the improvement of their condition, must always afford pleasure to the benevolent and philanthropic mind, and at the present time, when the "poor's rates" are making such fearful inroads upon property, any thing that may better their condition, and render them less dependent on public support, must appear agreeable to the wealthy, and doubly so to him who is wealthy and avaricious. These facts, I presume, are incontrovertible; and yet a system which has for its sole object to enable the poor man to do something for himself, by occupying a small piece of garden ground, has already met with some opposition. I have always observed, in the vegetable kingdom, that when a plant, a flower stem, or a shoot of a fruit tree was tied to a pole, or nailed to a wall, it in a short time became so feeble as to render future support absolutely necessary, while its fellows, that were left to balance themselves when shaken by the blast, acquired a vigour which fitted them for their exposed situation: exactly such takes place in the animal kingdom; and such is the case with man. It may not, therefore, be out of place here to notice some of the objections brought against that system, which seems so well calculated to encourage the labourer to depend on his own exertions. One of the most formidable, and the only one to which I will at present reply has appeared in a late Number of the *Farmer's Journal* by a correspondent who signs "A Yeoman," who doubts that cottagers would keep such lots of pigs and poultry as would induce them to steal for their support. Absolute want may induce a man to put forth his hands to his neighbour's goods, but a moderate competence cannot contri-

bute any thing towards such inducement. The cottager will soon learn, even if he were formerly inclined to pilfer, that one pig, properly fatted, is of more value to his family than ten starved ones ; he will also soon learn, from experience, that " Yeomen " are pretty sharp-sighted, and that, to use a Scotch proverb, " it is no easy matter to take oats from geese." To the uncharitable theory of the " Yeoman," and all such, I may be permitted to oppose some experience, that convinces me of the tendency which the cottage system has, to promote habits of honesty and industry ; and in doing this I conceive I am only paying a just tribute to human nature.

In a populous village of which I have long had the charge or management, where all have gardens, where each family keeps a pig, and some of them a cow, and where the garden and park of which I have the charge is situate within a gunshot of that village, although there is much fruit without the garden walls, much young wood in the plantations, and although the villagers have at all times access to the park for grass, turnips, potatoes, &c., which they purchase, I can say, that during these *twenty-one years* I have not lost a *sixpence-worth of fruit*, nor have I had the smallest reason to complain of any depredations in the plantations or fields. Their rents are most punctually paid half-yearly. The conditions of their tenure are honesty, sobriety, cleanliness, and industry ; and I have only had to remove one tenant for a breach of these conditions. In order to inform their minds, I established a village library eighteen years ago, which, by the small sum of 6*d.* quarterly from each member, now contains upwards of three hundred volumes. To diffuse a taste for flowers and the finer vegetables, I established a " Village Gardening Society," which has been productive of much advantage, and which has, even to the aged, opened up new sources of innocent pleasure ; in short, I treated the villagers as rational beings, and I have received corresponding treatment in return. The parish school being distant, they have established a subscription school in the village, and there is not a child in the neighbourhood, of ten years of age, who cannot read, write, and cast accounts. Such habits it may be easily inferred, save us from any thing like assessment or poor's rate. So far is the cottage system from having any tendency, in my opinion, to produce dishonesty, that in all my intercourse with mankind I have found that state of moderate competence which it affords, generally speaking, most favourable to genuine piety, to excite a greater dread of breaking the laws of an Omniscient Being, and an humbler and steadier dependence for daily support on his bounty, amongst those who had " neither poverty nor riches," than in the state of that man who could " say to his soul, Soul thou hast much goods laid up for many years."

Assuming, then, that the " Cottage System " has nothing in it hostile to the purest morality, I shall attempt to enquire to what extent it may be carried, and endeavour to show that its general adoption would prove more favourable than injurious to the " Yeoman."

All farms, to be managed with profit, should be of such extent as to be *fairly* wrought by one, two, or more ploughs. On black lands a pair of horses, with one plough, will, or ought to, work about 40 Scots, or 50 English acres, arable land, in a six-course shift ; in clay lands, 10 acres less : but, as I would wish cottage gardens chiefly to consist of what is generally termed " black land," it is to this description of soils that I will refer in my following remarks, keeping in mind that on clay lands spade culture will be in the ratio of three to four, and the crops less certain. A farm of three ploughs of black land should contain 120 Scots, or 150 English, acres. More would prevent the work from being properly performed, and less would be a loss, as the farmer could not proportionally diminish his annual expense of farm servants, or horses' keep. I would propose that over and above such extent of ground for each plough, a breadth equal to 5 per cent of *arable* land should in the first instance be laid off, or

attached to each black land farm, or farm which had as much black land, as that for every Scots acre, or 5 roods English, a cottage should be built, the ground to be divided in such portions as might suit the inclination or ability of the cottagers. On a farm of three ploughs there will be six cottages, with 6 Scots, or $7\frac{1}{2}$ English, acres. In building the cottages I would recommend strict economy, as far as it can be practised with proper attention to the comfort and health of the cottagers; for, whether such cottages are built by the farmer or proprietor, the rent must amount to from 5 to 7 per cent on the outlay, to insure any thing like a general extension of cottage building. This small colony will form an excellent and useful appendage to the farm. From among the inmates the farmer will get as many young people as will perform all the manual labour on the farm by the day; and in autumn, together with the families of his own farm-servants, he will be able to muster as many as will cut down his crops, of which they would be more careful than strangers; nor would he require to provide bedding, or pay for idle time. The rent of the houses and ground would be punctually paid in harvest labour, without the farmer having to encroach on the proceeds of the farm for that operation. If the farmer is possessed of an ordinary share of humanity he will soon become the patriarch of his colony. In their petty squabbles they would look up to him as an umpire, and, when oppressed, his influence should be extended in their behalf. If he perform his part well, I promise him they will not be deficient in theirs. Farmers need not be alarmed about too much produce, from 5 acres in 100 being subjected to spade culture. It will only employ some of our own poor in raising what otherwise would be raised by the serfs of Russia or Poland. From such a system industrious young men of sober and industrious habits may be expected to arise, who shall be attached to home because they have a property in the soil; and, in place of emigrating to foreign lands, they will only remove to cultivate our own *waste lands*, and form new villages or pendicles, where their labour will yield abundance of produce to supply the surplus population of some centuries to come; and amongst this class will always be found virtuous and industrious mechanics, able-bodied soldiers and sailors, to live in, or to defend, the land of their fathers. Believing, therefore, as I do, that the cottage system is favourable to the poor, to the farming interest, and to the state. I shall attend to the following queries, in the order in which they come:—

I. *What quantity of garden ground does it require to supply all requisite culinary vegetables, including potatoes, to a labourer's family, and to his live stock; the former consisting of two grown persons and four children, and the latter, at an average, of one pig, three rabbits, three hens, and three ducks?* (*Gard. Mag.*, vol. v. p. 713.)

As to the quantity of ground, supposing the soil to be of moderate quality, and not stiff clay, I conceive that 1 rood of Scotch land measure, which is nearly equal to 1 rood 10 poles English will be requisite; and this ground I would lay out in two equal divisions (having Scots measure in view in my remarks, which is in the ratio as four to five English measure). The one division of 20 falls (in English, rods) to be under late potatoes and oats, the other division under early potatoes and the different culinary vegetables; and, for the sake of perspicuity, I shall suppose the thing has been for some time established, and shall offer a few remarks on the mode of cropping.

Supposing that 4 falls of ground had been under early potatoes the year before, and that 2 falls of those first taken up had been succeeded by broccoli plants in the end of July, and the other 2 by cabbage plants in the end of August, with a plant of winter lettuce between each of the cabbage plants; and that 4 falls of the first taken up late potatoes had been planted with greens to come up in spring; that the broccoli and early cabbage of the former year had been followed by savoys and greens; the ground at the 1st of March will appear thus:—

Plan 1.

1	2	3
4	5	6
		7

1, Savoys ; 2, German greens ; 3, winter dug ; 4, broccoli ; 5, early cabbage ; 6, late greens ; 7, winter dug.

March. — In the first week of March the cottager will dig 2 falls, to be sown with beans, onions, leeks, carrots, and succory. The onions and leeks may occupy half a fall, and should be dunged with a compost of soot and dung from the poultry-yard, previously prepared. Some seeds of the magnum bonum lettuce may be dropped into the onion bed to be transplanted in May. The leeks may occupy a small space, as they will also be transplanted ; the carrots and succory need not be sown till near the end of the month. Half a fall may be planted with the long-podded bean, at 18 in. distance between the rows, and 6 in. between the plants ; 2 falls adjoining may be dunged with four barrow-loads from the pigsty, for early ash-leaved potatoes, with a double row next the carrot ground of early dwarf peas. This, with dunging, planting, and sowing, will require ten hours of the cottager's time. The second week he will dig 4 falls of the other division, and sow with the common oat ; as this will not require to be so finely broken, and no dung to carry, the digging, sowing, and raking will occupy eight hours.

The third week he will throw out the savoy roots, and dig half a fall for plants of cabbage, cauliflower, greens, savoys, broccoli, a few radishes and lettuce to be transplanted, leaving a small piece of ground for sowing a succession of lettuce ; this operation will occupy two hours.

The fourth week he will pass 2 falls for American early potatoes, and dig 1 fall for early cabbages, to be planted at 20 in. between the rows, and 18 in. plant from plant. Sowing carrots and succory will take three hours' work.

The vegetables in season in March are, late potatoes, yellow turnips, early broccoli, greens, and winter lettuce. At the beginning of April the ground will stand thus : —

Plan 2.

1	2	3	4	5
6	7	8	9	10
			11	12

1, plant bed ; 2, empty ; 3, German greens in use ; 4, empty ; 5, oats ; 6, broccoli in use ; 7, early cabbage, the winter lettuce in use ; 8, late greens ; 9, early cabbage ; 10, empty ; 11, early potatoes, and a row of peas ; 12, onions, carrots, succory, and beans. The time employed in March is twenty-three hours. ;

April. — The first week of April he will dig, dung, and plant the 2 falls left for the American early potato; and next the cabbage he will sow another row of dwarf prolific peas, which, with the assistance of a young person to plant, will occupy five hours. Hoeing and earthing up the cabbages which stood the winter will occupy two hours.

The second week he will begin to plant late potatoes, if in Scotland or the north of England; if farther south, it may be too early. Dunging from the pigsty, and planting 22 in. between the rows, and 8 in. between the plants, he may do at the rate of 4 falls each week as long as it lasts. I would recommend the York kidney and Scots red varieties. Although the pig may have been moderately well littered, dung will still be scarce; but any green weeds that can be collected about hedges or way sides will form an excellent substitute. If the pig's dung has been turned over once or twice, and mixed with ferns and other herbage, it will be more bulky and better for producing mealy potatoes. I may mention here that, with the exception of the onions and early potatoes, the other division will be supplied with *liquid manure* from a tank, in which soap-suds, chamber-lie, dish-washings that may not be wanted for the pig, &c., are thrown and allowed to ferment; which should be carried out in the evenings and laid between the rows. It should also be carefully observed that all green herbage that can be had before seeding will yield a rich manure, by being dug in, and allowed to ferment in the soil; whatever, therefore, is not wanted for the pig and rabbits should be dug in in a *green state*. In the third week dig another fall, and plant with sugarloaf cabbage, with a row of cauliflower plants if they can be had; this will occupy two hours. If 12 falls of late potatoes are planted, this will have occupied thirty hours, besides the same time for a young person to cut, and plant the sets; there will therefore be, at the end of the month, about four days of a man's labour, and three of a boy's or girl's; when the ground will stand thus:—

Plan 3.

1	2			3					4		
5		6		7		8		9	10	11	12

1, plants; 2, empty; 3, late potatoes; 4, oats; 5, broccoli in use; 6, early cabbage and winter lettuce in use; 7, young tender greens in use; 8, empty; 9, cabbages and cauliflowers; 10 and 11, potatoes and peas; 12, succory, carrots, beans, onions, &c. The vegetables in season in April are, late potatoes, broccoli, winter lettuce, tender greens, radishes, &c.

May. — In the first week of May sow a row of scarlet runners between the divisions. Dig 2 falls, and plant with late or drumhead cabbage for the pig in winter; and 1 fall to be sown with royal dwarf or green Prussian peas and turnips. Hoe and earth up peas and beans, and earth up winter cabbages. Finish planting potatoes. This will require thirteen hours of a man's work, and five of a young person's.

In the second week dig half a fall beside the turnips, and plant with lettuce from the onion bed, two hours' work. What of this is not used by the family will be a treat to the pig. The third week sow half a fall of yellow Aberdeen turnips; the 2 falls under broccoli, No 5., will be now clear, dig and plant with savoy, which will occupy five hours.

In the fourth week dig and sow half a fall with marrow-fat peas, and hoe the late potatoes with a two-pronged hoe, 4 or 5 in. deep. This will occupy ten hours. In this month there are required thirty hours, or three days, of a man, and five hours of a young person. At the end of the month the ground will stand thus : —

Plan 4.

1	2						3					
Scarlet Runners.												
4	5	6	7	8	9	10	11	12	13			

1, plants; 2, late potatoes; 3, oats; 4, Savoys; 5, cabbage in use; 6, greens in use; 7, marrow-fat peas; 8, Aberdeen yellow turnips; 9, green Prussian peas and turnips; 10, late cabbage; 11, cabbage and cauliflower; 12, early potatoes and peas; 13, carrots, onions, beans, &c.

June. — As soon as the greens and cabbage are over, dig and sow with yellow Aberdeen turnip, and plant with early cabbage and cauliflower, which may be about the second week of June, at which time the ground will be full. Earth up slightly early and late potatoes, as the stems lengthen. Weed and thin carrots and onions. Thin turnips; hoe and earth up cabbage and cauliflower; keep watering between the drills from the tank regularly over the whole, according to the supply. The amount of work in the garden this month may occupy about six hours each week, or about two and a half days in the month. The vegetables in season in June are, early cabbage, tender under leaves of Savoys, late potatoes, lettuce, onions.

July. — In the beginning of July the ground will stand thus : —

Plan 5.

1	2						3						
14													14
1	5	6	7	8	9	10	11	12	13				

1, plants; 2, late potatoes; 3, oats; 4, Savoys; 5, yellow turnips; 6, early cabbage and cauliflower; 7, peas; 8, turnips; 9, peas and turnips; 10, late cabbage; 11, cabbage and cauliflower now using; 12, peas and early potatoes about ready for use; 13, succory, carrots, onions, and beans; 14, 14, a row of scarlet runners.

By the middle of July, the early peas and early ash-leaved potatoes will be in use; and by the end of the month the ground will be dug over and planted with broccoli. A ridge of celery may divide the ground from the carrots, which will afford a substantial salad, and also foliage for soup in winter and spring. A foot thick of green manure laid in a week before

planting, and slightly covered with earth to promote fermentation in the green herbs, with an occasional watering from the tank, will produce excellent celery. Give the late potatoes a final earthing up; weed carrots and onions; earth up cabbage and cauliflowers; rod the marrow-fat peas and kidneybeans. The work may this month occupy twenty hours of the cottager, or five hours every week, and about a day and a half of a young person. The ground being now full, and No. 11. and the remainder of No. 12. only to be cropped in August, it may be unnecessary to continue the sketches of the ground, and it may be here observed that the division under late potatoes and oats the one year will fall to be under the peas and cabbage tribe next season. The vegetables in season in July are, early potatoes, green peas, cauliflowers, cabbage, lettuce, onions, carrots, turnips, &c.

August. — The yellow turnips should be thinned to stand 4 in. apart in the rows, and at least 18 in. between the rows early in August. The onion bed should get the final weeding, and the alleys be dug, and planted with lettuce, of which a succession should be sown in the plant bed monthly. The ground under the American potatoes will be getting partly clear, and should be dug as the potatoes are taken up, to be planted with early York cabbage, and winter lettuce, in the following month. The ground should also be turned over as the cabbage and cauliflower are cut, or the cabbage may be allowed to stand to give young tops till winter. The work in this month will not exceed four hours each week, or a day and a half. The vegetables in season are, American early potatoes, turnips, cabbage, cauliflowers, lettuce, peas, kidneybeans, carrots, &c.

September. — The ground under early American potatoes will be clear, and ready for cabbages and winter lettuce, which should be planted by the middle of the month, by which time the late potatoes will come in; a few rows of leeks may be transplanted to blanch for winter use. The oats will be cut down and stooked when ripe; the grain should be beat out and reserved for the poultry and pig, and the straw laid up for litter. Take up onions as they ripen, and tie in bundles when dry. Keep down weeds and earth up Savoy. Plant 1 fall with German greens for winter, as soon as the ground is clear of late potatoes. The work this month will occupy about five hours in each week, or about two days. The vegetables in season the same as last month.

October. — Plant to the extent of 3 more falls after late potatoes, as soon as the ground is clear. Take up the whole by the 12th, and pit or secure them in a house. The stems should be previously cut and dug into the oat ground; the roots may be thrown into the pigsty. Taking up the potatoes and digging the ground, and also the ground under oats, will form the chief employment in October, and will at least occupy the cottager about four days, or a day every week. Much, however, of the time requisite for the garden may be spared in by-hours, if the cottager is a mechanic, or if he gets employment by the day near home. The vegetables in season are the same as in the two former months, with the exception of peas and beans.

November. — There is little to do. The yellow turnips should be all taken up, and secured with a slight covering from the frost. Carrots should also be stored up in sand or dry earth; succory may be blanched within doors, but the root, as coffee, will be of most value; it sells in Scotland as high as 6d. the root, of no great size, to be mixed with the coffee of invalids, and consequently cannot be bad for people in health. Cleaning the ground of summer crops, as they are over, and winter digging the same, will be easily performed in one day each month, from November till March.

I have gone thus minutely into the operations of every month, and although on stubborn soils more time may be requisite, yet, on light easy

soils the time employed will be less; twenty-six days of a man and about six of a boy will be an ordinary average to make the most of the ground. With regard to cooking, I must confess, I know little about it, and I think I will maintain my credit best with the housewife to say little on the subject. She is certainly not deserving the name of wife or mother if she cannot dress the vegetables; I have given directions about raising, in various ways, to suit the taste of her husband, her children, and herself, and that to every advantage. I may mention that potato flour made in the way which every housewife knows to make potato starch, makes an excellent dish boiled with milk, *à la* Sir John Sinclair; but labourers think it rather soft. I fear the mode of cooking kidneybeans dry, that I am acquainted with, takes too much fire and time for a cottager's wife. The offals of the kitchen and garden, however, will feed two pigs annually, of about seven months' age each; the one to be bought in about February, and the other about September; one to be killed in November, and the other in March, weighing about 144 lbs. each. The poultry should be of the Polish or Cossack breed: I mean the hens; those I have of that breed, having their feet feathered to the ground, scrape little, seldom hatch, and lay eggs almost perpetually. I have taken no account of the time the wife or children take in feeding the pigs, rabbits, and poultry, as it is only a recreation.

Fruit Trees and Shrubs. — I have hitherto said nothing of fruit; but as some can be easily obtained, I would recommend a few apple trees to be trained as espaliers between the divisions, and the kidneybeans could be raised somewhere else. One tree of the white codlin, one of the eve, one of the Cambusnethan pippin, or Scots redstreak, and one of the winter wine apple, one of the Crawford and one of the black Auchan pear trees, with six currant and ten gooseberry bushes trained on an espalier rail, would afford some of what the cottager esteems as the real luxuries of a garden, without occupying much room. Having thus far endeavoured to procure pork, eggs, and vegetables, I shall now attend to the second query.

II. *What additional ground and what arrangements will be necessary to add two goats for milk to the stock?*

Goats are easily tamed, and may be easily habituated to eat any thing; but they are volatile and mischievous, and will require to be confined, and to have room to frisk about in that confinement. Their dung, too, will be of little consequence; but as it is requisite to notice this part of the query, I shall humbly submit to the philanthropic querist a mode of obtaining milk, *on a small scale*, with the same ground as would be requisite for the keep of two goats, and put it in the cottager's power either to have two milk goats, or one small *Shetland cow*. The ground requisite for both being, in my opinion, nearly the same, I shall give the directions which may suit for either.

Shetland cows, I may remark, may be had as small as 10 to 12 stones Amsterdam, and such will yield from 8 to 10 quarts of excellent milk daily; they are easily kept, easily fed, and when fat afford the best beef in the world; besides, the dung and urine to the cottager's garden are of immense importance. To keep either two milk goats, or one small Shetland cow, another three roods of ground would be necessary; this would be on the whole one acre, Scots measure. If goats are preferred, about ten falls would require to be enclosed with a railing at least 6 ft. high, with a door at one side to enter for the purpose of feeding and milking. A covered track should stand somewhere near the centre, so contrived as to keep them and their food dry in the time of rain, with access to scramble over its top. The cow would dispense with either the ground or the fence, I shall therefore proceed to give directions about the management of the ground, as it is the same in both cases, with this difference, that if goats are kept, the ground and the produce, as well as the expense of culture,

will be less, in the proportion of ten falls. I shall be the more particular in this department, as the very same directions on a large scale will suffice for keeping of an ordinary cow. In either case the division under potatoes will be attached to the new rotation, and the kitchen-garden work will not be repeated. We have, therefore, 140 falls, Scots measure, which I propose laying out in four equal parts, to be subjected to the following rotation, viz. potatoes and turnips with dung, barley with grass seeds slightly dunged, grass, oats, 35 falls in each division.

Supposing the work to be performed by the spade, 35 falls will require to be dug in March, and sown with oats, about a bushel and a half; this will require six days' hard work in that month.

Twenty falls of potatoes, digging, dunging, and planting in April, and 35 falls for barley slightly dunged, will require about ten days of a man, and five of a young person, in that month. A bushel of barley, 3 lbs. of clover, and a quarter of a bushel of rye grass, will seed the barley division. If any of the potatoes are not planted in April, they may be got in in May.

In June 15 falls will require to be dunged and sown with field turnips, at 27 in. between the rows; this will take three days work; hoeing potatoes, collecting dung, &c., one day's work.

A young person will clean the turnips in July, and earth up the potatoes in two days and a half.

The same time will be requisite in August. If goats are kept, 20s. worth of bone-dust will have to be purchased yearly. If a cow is kept, no purchase of dung will be necessary. I have, in such cases, found the cottager able to sell some, and keep his ground in good order.

A man or woman will cut the barley in one day. The oats will take the same time. Stooking and stacking, a day. Taking potatoes up in October, and digging the ground, four days. Threshing oats and barley in course of the winter, making up the straw, and cleaning the grain, four days in all, or thirty-three days of a man and ten of a woman; but the work in the garden will be proportionally lessened as the late potato division is attached to this rotation, which, including the garden, may amount in the whole to forty-eight days of a man and sixteen of a young person in course of the year; for which the cottager has the above vegetables in regular supply; pork, eggs, milk, to supply an ordinary family; 2 bolls, equal to 12 bushels, oats, and 2 bolls barley, besides seed for next year.

III. *The ground requisite for a labourer's family, pigs, and a cow?*

I now proceed to notice the third query, respecting the keep of an ordinary cow, which may weigh about 24 stone, Dutch. To support a cow of this weight, 1 Scots acre and 3 roods of ordinary land will be necessary, including 20 falls for garden ground, which will be divided in four equal parts, besides the garden; or 65 falls in each part, to be cropped in the same manner as above, with this difference, that the potatoes and turnips shall occupy equal proportions of that division. The turnips to be followed with barley, and the potatoes with oats. The barley to be sown with grass seeds, and half the grass division to be laid out in equal parts, with some of the larger late cabbage and peas shifting with the grass alternately, so as clover will only succeed clover once in eight years, which will insure good crops. This ground should be let to plough, and might cost the cottager about 17. 15s. annually, or work to that amount to have it done; which would much abridge the necessary labour by spade work: but, as work is scarce, I shall suppose that the whole is done by the spade, which would be sixty-one days, with five days added for the peas and cabbage in the grass division, or sixty-six days of a man and twenty of a woman, to which we may add fifteen days of a man for the garden and six of a woman, making in all on this establishment eighty-one days of a man and twenty-six of a woman.

Having now concluded my remarks on culture, I shall endeavour to form an estimate of profit and loss on each establishment.

For the *lowest grade* : —

	£	s.	d.
The house rent should not, if possible, exceed 2 <i>l.</i> at 5 or 6 per cent. on the outlay.			
One half of garden ground, or 20 falls at 1 <i>s.</i> per fall, which is the ordinary rate for such ground in Scotland, or at the rate of 8 <i>l.</i> per acre, makes 1 <i>l.</i> rent of the other half, which should be rented as ordinary land, 6 <i>d.</i> per fall, or 10 <i>s.</i> , so that the rent will amount in the whole to		3	10 0
Vegetables and potatoes used daily, as stated in the remarks, will not be overcharged at 3 <i>d.</i> per day, making in the year	£	4	11 3
Two pigs, one killed in spring, and one in autumn		3	10 0
Eggs, from three Cossack hens, and three ducks, 365		0	15 2½
(If the boys attend to the rabbits, a dish of them, and occasionally a dish of young ducks with green peas may be had.)		8	16 5½
From which deduct, for man's work, 26 days, at 1 <i>s.</i> 6 <i>d.</i> = 1 <i>l.</i> 19 <i>s.</i> ; six days of a boy or girl at 8 <i>d.</i> = 4 <i>s.</i>		2	3 0
		6	13 5½
Price of two pigs, at 10 <i>s.</i> each		1	0 0
			£5 13 5½
Leaving a balance in favour of industry of 2 <i>l.</i> 13 <i>s.</i> 5½ <i>d.</i> , besides covering house rent, which falls to be paid with or without a garden.			

In the *goat and Shetland cow division* : —

	£	s.	d.
The house rent		2	0 0
Rent of barn and byre (tithes always commuted)		1	0 0
Rent of 20 falls garden ground, 20 <i>s.</i> ; 3 roods of land at 4 <i>l.</i> per acre		4	0 0
33 days of a man at 1 <i>s.</i> 6 <i>d.</i> , 2 <i>l.</i> 9 <i>s.</i> 6 <i>d.</i> ; 10 days of a woman at 8 <i>d.</i> , 6 <i>s.</i> 8 <i>d.</i>		2	16 2
Price of two young pigs		1	0 0
			£10 16 2
	£	s.	d.
Vegetables and potatoes, as above		4	11 3
4 falls additional potato ground		0	5 0
Two pigs, fatted as above		3	10 0
Eggs, as above		0	15 2½
Milk of a Shetland cow, at 8 quarts daily, for four months; 6 quarts daily, for two months; 4 quarts daily, for two months; 2 quarts daily, for two months; dry two months: equal to 4½ quarts daily, or 1460 quarts yearly, at 1 <i>d.</i> each		6	1 8
3 bolls of oats, at present low prices, 1 <i>l.</i> 15 <i>s.</i> ; do. of Barley, 2 <i>l.</i> 4 <i>s.</i>		3	19 0
			£19 2 1½
Leaving a balance in favour of the cottager on this establishment of 8 <i>l.</i> 5 <i>s.</i> 11½ <i>d.</i>			

Being able to speak with most certainty as to the cow, I have stated her proceeds; probably the goats might yield nearly as much, although from their nature, and the little quantity of dung they make, I think the Shetlander will be the greatest favourite.

Amongst the generality of the *second class of cottagers* : —

	£	s.	d.
The rent of house and offices in the highest class		3	0 0
Rent of garden, 1 <i>l.</i> ; of land, 220 falls, at 6 <i>d.</i> = 5 <i>l.</i> 10 <i>s.</i> , tithe free		6	10 0
81 days' work of a man, 6 <i>d.</i> 1 <i>s.</i> 6 <i>d.</i> ; 26 days of a woman at 8 <i>d.</i> , 17 <i>s.</i> 4 <i>d.</i>		6	18 10
Price of two pigs, as above		1	0 0
Interest on 10 <i>l.</i> for an Ayrshire cow		0	10 0
			£17 18 10
	£	s.	d.
Proceeds of garden, as above		4	11 3
16 falls of potato ground more than in the garden		1	0 0
Two pigs, fatted as above		3	10 0
Eggs, as above		0	15 2½
Milk of an Ayrshire cow, 16 quarts daily, two months; 12 quarts daily, two months; 8 quarts daily, two months; 4 quarts daily, two months; 2 quarts daily, two months; dry, two months: or 7 quarts for every day in the year, 2550, at 1 <i>d.</i> each quart		10	12 11
Oats, 5½ bolls, besides seed		4	16 0
Barley, 13½ bolls, besides seed		1	18 6
Peas, 4 bushels, at present prices		0	14 0
			£27 17 10½
Leaving a balance of 9 <i>l.</i> 19 <i>s.</i> 0½ <i>d.</i> in favour of the cottage system, besides charging all along house rent.			

I am sensible that the cottager, when his cow gives most milk, cannot derive the same advantage from it as if he had exactly as much as would

supply his wants. I have rated the produce of the cow low, and its value at 1*d.* per quart, *sweet*, at the lowest country rate; near towns it is doubled or trebled in value. About 3*l.* might be saved in labour on the large establishment, by employing the plough; but circumstances will always regulate this. With regard to the produce of the field department, its application by the English and Scotch is widely different. In Scotland the oats will be ground into meal, and the barley into barley flour; the five and a half bolls oats is within one boll of what would suffice a family all the year over for breakfast, with milk, made into pottage. The barley flour will make bannocks, which are always on the table at dinner; potatoes and milk, cooked in one or other of the "hundred and one" ways of which they are susceptible, furnish a light supper for the greater part of the year. In the highest establishment, therefore, very little will require to be purchased, and about 4 lbs. of butter may be sold weekly during the summer months, by a frugal wife, to assist in getting clothes to the children, paying books and school fees, &c. This is the way we live in Scotland: we like our oatmeal pottage, our barley bannocks, and our *independence*. As wheat cannot enter into the culture suited to a cottager, whose cow would perish on wheat straw, the system will not be so profitable to an English family. While a Scots housewife would have her oats, barley, and peas made into meal and flour, for bread and pottage, an English cottager's wife would convert the barley into malt, if His Grace of Wellington allowed; the peas she would have split for making into soup, a very excellent dish, too; but the oats, so necessary for "hawkee's" fodder, would have to be sold and converted into quatern loaves, which might bring about two and a half loaves in the week, at 9*d.* The prejudice, however, in the south is so strong against the use of oatmeal, that I shall not attempt to remove it. With regard to mills, in Scotland we are every where supplied with water-mills, the owners of which drive our corn to and from the mill, and grind it for an allowance of a twentieth part. Where such cannot be got in England, one of the hand-mills must be resorted to; but it might be better if a miller by profession would purchase one of the most approved, and grind the corn of the cottagers at the same rates as they do in Scotland. The only implement I have to recommend to abridge labour is a kind of plough-hoe, which I invented last season; it operates on the same principle as a Dutch hoe, and for surface weeds a man may push it before him, and work as fast as he can walk; it will go to any depth, being guided by a wheel before the hoe. A drawing of this implement will be sent for the Gardener's Magazine. With regard to a horse, this can only, in my opinion, be adopted when the country is in a state to improve waste lands; at present the poor are in *immediate* want of some means of support. The improvement of waste lands for cottagers or pendiclers would require a long essay of itself.

The facts I have stated being familiar to my mind, I do not know that I have exaggerated in any one instance; if what I have stated be thought worthy of publishing, and be of any benefit to my fellow-countrymen, it will give me much pleasure.

THE COTTARMAN'S FRIEND.

January, 1830.

PART II.

MISCELLANEOUS INTELLIGENCE.

ART. I. *General Notices.*

WILKIE'S Wheel Plough, and Liston's Wheel Plough. — I have not seen Mr. Wilkie's wheel plough, or parallel adjusting brake, and I cannot, therefore, give any opinion of them; but, so far back as the year 1813, I conceived the idea of introducing a wheel into the body or bosom of the common plough, about 15 in. diameter, to act as the sole, and made several exhibitions of a plough so constructed before numerous scientific gentlemen and practical farmers, including the Dalkeith Farming Society. The result was highly satisfactory, so far as it lessened the draught; and this was not confined to my own ploughs, but a similar result was produced when the wheel was applied to those of different makers. Of these trials I have, or had very lately, a memorandum of the particulars; but I cannot lay my hands upon it at present. From recollection, however, I may state that the average draught of the ploughs was about 3 cwt. 2 qr., taking a furrow of about 10 in. wide by 8 in. deep; but when the wheel was applied to the ploughs, their average draught was reduced one fifth, that is, they were drawn by about 2 cwt. 3 qrs. But notwithstanding this decided advantage, it was observed by some of the farmers as a great objection, that it would require some attention from the ploughman to grease the axle of the wheel [!!]. This objection I thought lightly of, and said so at the time: the reply was, that they found difficulty in getting men who understood the management of the plough in its simplest form. I, however, made a good many of them for a year or two, and sent several to the West Indies and to other parts abroad; but they never came into general use. The Rev. Mr. Liston, some years afterwards, introduced into his patent plough a wheel of larger diameter than mine, with a narrow rounded sole: the wheel was placed at such an angle as to remove or lessen both the sole and land-side friction. I made a good many of them for that gentleman; but, as was the case with my own ploughs, they never came into general use. I am, Sir, &c. — *Sam. Morton. Leith Walk, Edinburgh, Oct. 27. 1829.*

The Stone-breaking Machine consists of a rotatory steam-engine attached to a machine similar to a bone-mill, but considerably stronger, which breaks the stones to cover the road at the astonishing rate of 70 or 80 tons in ten hours. The engine is mounted on wheels, so that it can be removed to any part of the road without being taken to pieces. (*Newton's Journal*, vol. iv. p. 164.)

Substitute for the Term Bailiff. — I quite agree with you as to the expediency of confining the hateful term bailiff to the law officer so called, and of banishing it altogether from the language of agriculture. Must we choose a substitute from the words farmer, agronome, steward, and intendant? I prefer the last word. — *W. October, 1829.*

The word intendant, without a prefix, does not appear to us sufficient; we prefer the word farmer. When used alone, it is to be understood in the same manner as the word gardener when used alone, that is, generically. Why should not we see gentleman's farmer, commercial farmer, &c., as well as gentleman's gardener, commercial gardener, &c.? — *Cond.*

To destroy Slugs. — I have always remarked that slugs will attack the leaf of a somewhat withered cabbage, in preference to those in a more thriving condition. When I plant out a bed of cabbages, therefore, I strew the leaves that I cut off all over the bed, and the slugs will lie under them, and feed on them in the shade. Every day or two I have the leaves gathered up and given to the pigs, and then strew more leaves; and so on, till I get rid of the slugs entirely. — *W. B. Rose. Forcote, June 10. 1829.*

To destroy the Caterpillar. — A person has tried successfully, for a number of years, "2 oz. of white hellebore dissolved [infused] in three gallons of water." — *R. C. Kirkliston, August 22. 1829.*

Propagating the Genus Pinus by Cuttings. — Since I last saw you, I have succeeded in propagating, by cuttings, several species of *Pinus*, in addition to those you have mentioned in the Magazine. It is a curious fact that the young glaucous shoots that spring from the collar and a little way up the trunk of *P. longifolia*, *P. canariensis*, *sinensis*, &c., strike readily, and in a short time make as handsome plants as if they had been raised from seeds. I have at this moment plants of the *P. longifolia*, *canariensis*, *sinensis*, and *occidentalis*, which cannot be distinguished from seedling plants. Whenever trials were made with the extremities of the proper branches, they have with me invariably failed. A good example of the young shoots I allude to may be seen in a two or three years old seedling stone pine. — *W. Baillie. Dropmore, Dec. 22. 1829.*

Canavalia? (Dec.) *bonariensis*; *Leguminosæ* § *Phaseoleæ*, Lindl. Bot. Reg., t. 1199. — This "lovely climber" has been noticed as a "tender stove plant;" but it is a most important addition to the green-house or conservatory, flowering, as it does, the whole summer. The stem is woody, sarmentose, extending to a great length; the leaves are ternate, smooth, and shining; the flowers appear in axillary racemes, of a most beautiful reddish purple. Propagated with facility by layers. Cuttings are also rooted without difficulty in sand under a glass in bottom heat. A rich loamy soil is suitable for it. — *Botanicus.*

Encelia (Adans.) *canescens* Cav.; *Nat. Order, Compositæ* § *Helianthææ*, Bot. Reg., t. 909. — Plants of this interesting species were subjected to a warm border in May, which have, notwithstanding the unfavourable season, thriven with marked vigour. The stem is shrubby, 2 to 3 ft. in height; the leaves are large, ovate triangular, clothed with soft hoary down. The flowers appear in corymbs; florets of the ray about twelve, of a fine yellow; disk dark purple. It requires to be an inmate of the green-house during winter in an airy situation. — *Id.*

Shallots. — I frequently hear it mentioned by different persons, that they find a difficulty in growing these useful and piquant roots. I formerly did so. I have for several years past planted my shallots in drills about the middle of March, putting in each drill a small sprinkling of salt; upon that a layer of *dry soot*, about half an inch thick. I then plant the roots upon it, about 6 in. apart, and immediately cover in and beat down the soil with the back of the rake. By this method I uniformly succeed in getting excellent crops of large and sound clusters of bulbs. — *Orrus. Yorkshire, lat. 54°, Oct. 31. 1829.*

Marking Geraniums. — It occurs to me that my method of marking geraniums might be useful to Mr. Daniel and others, and I therefore beg to send it for insertion in your useful work. I make my tallies 3 and 4 in. long, and one quarter and three eighths of an inch wide. I paint them black; and as I use them, I cut the mark in the Seton method, which then appears white and visible. I am quite satisfied with the plan, and don't doubt it will be approved of. — *X. Y. Sept. 15. 1829.*

Prolific or conical Hautbois Strawberry. — I last year received a parcel of strawberry plants from the garden of the Caledonian Horticultural Society at Edinburgh, and among the varieties was one bearing the above name. It

produces good fruit. The flowers have the rich scent of the sweet violet (*Viola odorata*), though not so powerful as that of the delicate harbinger of spring. As I have not access to the monograph of the strawberry, by Mr. Barnet of the Horticultural Society, I am not aware whether or not he has noticed this peculiarity. — *Orras*. Yorkshire, lat. 54°, Oct. 31. 1829.

ART. II. Foreign Notices.

FRANCE.

SCHOOLS in Auvergne. — Mademoiselle d'Orleans, sister of the Royal Duke, has a seat at Raudan, in Auvergne, where the princess has established a great number of benevolent institutions. Among them are a lace school for girls; a school of drawing and elementary architecture for workmen; an evening school for workmen and artists; a school of mutual instruction for girls; a gratuitous pharmacy, and a school of mutual instruction, for all the children of Raudan and the environs. (*Galignani's Messenger*.)

Rural Coffee-houses at Lyons. — On a fine Sunday afternoon, all the population of Lyons, in their gayest attire, seem to come out on this road. In London the people scatter themselves on such an occasion in all directions; in these French towns all seem to direct their steps to one point, and pains are taken by the government, or the community, to make the point agreeable. This coffee-house has, however, at present one disadvantage; the garden is on a terrace level with the saloon, and a row of young plane trees by the side of the road below, is just of a height to shut out the prospect from the whole range. Another coffee-house, which has its little summer houses and Chinese pavilions scattered about at different elevations, is better in this respect, but inferior in every other. (*Wood's Letters of an Architect*, vol. i. p. 134.)

The Greffe des Charlatans. — The department of grafts, in the Jardin des Plantes at Paris, contains a number of curious particulars, and M. Thouin, the professor, was so good as to accompany me, and to explain the various experiments. Virgil has said, that if you pass a vine through a walnut tree, it will bear the most large and beautiful fruit, but bitter and uneatable. To use M. Thouin's expression, "*le fait est faux*:" he made several attempts to conduct a vine through the trunk of a walnut tree; but as soon as it began to enlarge sufficiently to feel the confinement, it uniformly died, and he was never able to procure any fruit from it. He then passed a vine through a pear tree, whose wood being softer, did not compress it so much as entirely to stop its growth; but the grapes produced above this insertion did not differ in size or flavour from those below. If then, he reasoned, the grapes are altered in size or flavour by passing through a walnut tree, the converse of the proposition ought to hold good, and we shall alter the walnuts by passing a branch through a vine. The experiment was tried, but both grapes and walnuts remained as they were before. Another graft is called "*des charlatans*." Pliny says that Lucullus showed him a tree producing grapes, apples, pears, cherries, and other fruit, belonging to trees having no relation to each other, from the same root; and this, he tells, was effected by grafting. It has been a problem ever since among gardeners, to produce this tree of Lucullus. M. Thouin has succeeded, not by grafting, but by planting the several stocks in a hollow trunk. (*Ibid.*)

Currants. — The French are about to introduce into Corsica the culture of the raisin de Corinthe (currants), for which purpose a thousand plants have been imported from the Morea. It is thought by the best horticulturists, that the climate of Corsica is well adapted to the growth of this excellent grape. (*Lit. Gaz.*)

GERMANY.

Pinus resinosa Aiton. — I have made further enquiries respecting the Pin de Hagenau : it is said to be nothing but *Pinus sylvestris* L., growing more luxuriantly in a rich, than in a poor, soil. I send you, for farther experiment, one pound of seed, and also two branches with cones from the *Pinus resinosa* (Ait.), *rùbra Michaux*, which grows in the Hartwald, in Leimerslächle, whence I brought them myself: this species is remarkable for its sturdy growth, and deserves every attention. — Von Hartweg, Garden-inspector, Carlsruhe, Oct. 24. 1829.

We have put up the seeds in twenty packets, and sent five of them to Mr. Charlwood, Great Russell Street, Covent Garden; five to Mr. Barnet, Calcd. Hort. Soc.; five to Mr. Sidey, Perth; and five to Mr. Mackay, Dublin. — Cond.

Vienna, Sept. 18. 1829. — I was much taken with the Pfauen Insel, near Potsdam, which we had the advantage of seeing under the guidance of your friend, M. Fintelmann, jun., who talks of sending you an account of their late improvements, which I strongly urged him to do. Vienna thus far surpasses my expectations, but we have not yet seen enough of it to form any decided opinion. One fact places its morality or excellent police, one or both, in a striking point of view. This morning a man was hanged, an event which our valet de place declares has not happened for three years before; and his account is confirmed by the intense interest which the event excited, nothing else being talked of by every one. — W. S.

DENMARK.

Royal Gardens, Rosenburgh, July 4. 1829. — Sir, I am now, I believe, fixed here at Rosenburgh. His Majesty the King of Denmark was most graciously pleased to install me, in July last, as assistant gardener to P. Lindegaard, Esq., His Majesty's head gardener, on account of his old age and indifferent health. I have at present nothing more to wish for, but the pleasure of seeing you here some time or other. M. Lindegaard again asked me to invite you to stay at his house while you remain here, if you should visit this country * * * *; and I offer myself as your guide or conductor (particularly if in the summer time) through a part of the country, flattering myself that I shall be able to procure all the information you may wish in Denmark. By the first convenient opportunity, I will send you the long promised *Hórtus Hafniensis* [since received, with several other works], along with the Supplement. The work is now out of print. There is at present very little to be said in the horticultural way. Our very severe winter lasted from the 24th of last December till April 14th, freezing every night, and the thermometer standing for a long time at from 8° and 9° to 14° Reaum. (11° and 12° to 1° Fahr.) and upwards, according to reports, out of town. There was also a great quantity of snow, and the winter altogether was not equalled in the remembrance of the oldest people here. My time was entirely and continually occupied in our extensive forceries, as M. Lindegaard was confined to his bed and room for several months. Yet we have occasionally had a ripe pine-apple, and we cut one on the 19th of January, of the sort called in Holland Montserrat (?), weighing a little more than 3 lbs. Danish, 16 oz. to the lb. It was grown in a temporary pit similar to what is used in England, and which I have exclusively introduced into this country with great success. If we could get pineries constructed exactly in the English style, we should perhaps succeed still better. A pine pit is at present about to be built in this garden, according to a drawing I have made, with a small flue in front, and brickwork all round. I will, if you desire it, send you a sketch of the plan. The peach trees against the wall have suffered, even though they were covered with straw mats; all our peach trees

being covered every winter with old pieces of mat nailed on the wall, and the trees unnailed in the autumn, and tied together in four or five bunches, quite flat against the wall. Even the apricot and mulberry trees, which were on the wall, but uncovered, have been injured by the severity of the winter.

A small flower-garden belonging to Her Royal Highness Princess Caroline Amalie, at Sorgenfrie, which I laid out in the spring of 1828, and planted with a select collection of several sorts of *Rhododendrons*, *Azaleas*, *Kalmias*, *Magnolia glauca*, *Calycanthus floridus*, and other shrubs, from Mr. Booth, at Flotbeck, was properly covered in the autumn with spruce fir branches and spray, and hardly any injury was done during the whole winter, while similar plants in the gardens at Rosenburgh suffered very much under a cover of reed mats. However, the former garden has a N.N.E. aspect, and the borders of it I had prepared with peat and leaf mould, sand, &c. In the garden at Rosenburgh, *Rosa semperflorans*, *Viburnum Tinus*, *Prunus Laurocerasus*, and other plants, were frozen down to the ground, and many of them killed, under a very thick covering of mats.

In the middle of April last we gathered the first kidneybeans grown in hot-beds, and also the first strawberries (*Boskopper*) forced in pits constructed for the same purpose. About the same time we also cut the first cucumbers. Our first-forced carrots and cauliflowers we took on the 13th of May. In the latter end of June we sent the last of the Newtown Pippins to court, as fine as if they had been gathered from the open trees the same day; also a couple of peaches, the first ripe fruit this year. In November last His Majesty was pleased to confer on M. Lindegaard, and the late M. Holböll, the honour of knights of the order of Dannebrog; they were the first and only gardeners in this country ever distinguished in this manner.

Last summer a green-house was erected in the Royal Gardens at Fredericksberg, by Mr. Wolff, the royal gardener, heated by hot water according to Mr. Atkinson's plan, and it succeeded very well. I will send you a further account of it for a future Number. Yours, &c. — *Js. P. Petersen.*

ITALY.

The Bread at the Foot of the Alps is made of chestnuts; in the Abruzzi, and in Calabria, of Indian corn, and the two kinds are equally wretched. The chestnut bread of the Alps occasions nodosities, swelled joints, and ultimately contracted limbs. The Indian-corn bread gives swine the mange, and man the scurvy. But where nothing else can be procured, man must be content to sustain life on such terms as he can. (*Times*, Oct. 28.)

The Malaria. — The bad air of Rome and of the Campagna have, I suspect, been greatly exaggerated. In the latter there seems to be a want of wholesome water; Rome is abundantly supplied, and this is perhaps partly the reason why the city is more wholesome than the country. Another source of disease is to be sought in the nature of the food eaten by the poor. When a man breakfasts on cucumbers, dines on melons, and sups on love-apples, what has he to support him? In the spring they have, instead of these, purslain, artichokes, and lettuces. Fruit is dearer at Rome than at Bologna, but vegetables are good and plentiful. A lady, last night, was complaining that she could only get fifteen pauls for a cart-load of lettuces, forty-five pauls being equal to a pound sterling. A mass of artichokes, consisting of twenty-six, cost, this spring, two bajoes. They are small, and being boiled till they are soft, are eaten whole. Love-apples have sometimes been sold as low as twelve pounds for a bajoe. Wheaten bread, at the same time, bears about two thirds of the price it does in England. Polenta is cheaper, but the temptation is greater to fill the belly with a food, which, if less wholesome, is more savoury, as well as at a lower price. (*Wood's Letters of an Architect*, vol. ii. p. 173.)

GREECE.

Laconia is susceptible of the greatest improvements; the land there is extremely productive, though, from being badly managed, every kind of agriculture and gardening are in a state of infancy, and the fruits and herbage of all kinds is of a very inferior quality. When it is considered that this defect may be remedied, and that the unwholesomeness of the marshy lands may be removed by bringing thither a considerable number of exotic plants, of which they do not know even the names; it may be imagined that even the least political commotion, and the smallest change in the usages of the country, have been of service to this part of Greece, and will become beneficial to humanity. (*Report of the French Expedition sent to Greece.*)

ART. III. *Retrospective Criticism.*

Mr. Thompson's Experiments in Vegetable Physiology. — Sir, Every practical man must be pleased to see contributions from the able and experienced Mr. Thompson of Welbeck. It is from such sources we can only expect to derive legitimate information on the still obscure science of vegetable physiology. It can only be illustrated by patient investigation and daily opportunities of witnessing the silent processes of vegetable life. For such investigation Mr. Thompson has peculiar facilities, as well from situation as from characteristic penetration, long experience, and a refined love of his business.

In reading Mr. Thompson's papers I was forcibly struck with the truth of what has often been said of other matters; viz. that two observers of the same phenomena will often come to different, and even opposite, conclusions, either as to the causes or effects. This, I regret to say, appears to be the case between Mr. Thompson and myself on the present occasion, and on the same subject; namely, the circulation, or rather the primary motion, of the sap. We have both seen and studied the growth of the vine, as well within as out of doors; the flowing of the sap in pruned or felled birch and other trees; the facts noticed by Miller and Bliss; the growth of plashes, of quicket hedges, and felled trees; and, moreover, the well-known circumstance of the bark of oak running sooner at the top than at the bottom of the boles. Strange as it may appear, however, these very circumstances were proofs to me of the *ascent*, not the *descent*, of the sap.

I presume not to justify this my opinion, especially as it is, or seems to be, so directly opposed to that of one who has had, no doubt, opportunities for observation equal, if not superior, to mine; but the least I can do is to submit to Mr. Thompson the reasons that weighed with me, and served to confirm my idea of the subject.

That the primary motion of the sap begins at the top before it is in motion at the bottom of the trunk of a tree, is an obvious fact. How then can it be said to ascend? This question can only be satisfactorily answered by referring to other, though exactly similar, natural phenomena. Besides the direct motion of fluids, a retrograde motion is also, at the same time, in certain circumstances, observed; which was a great puzzle even to philosophers, till it was explained by the indefatigable and accurate Franklin: — A dreadful storm once crossed the United States of America. The accounts of its ravages on the line of its destruction showed that it began *to leeward*, and ended *to the windward*, of its course! This was accounted for by Franklin by instancing the effect of opening suddenly one end of a full canal: the motion of the retiring water begins at the outlet, and generates backward till the whole flows out. Such is the case with all ponderous fluids which escape from any confinement, whether canal, trough, pipe, or tube; and such is the case, I humbly apprehend, with the elastic sap of a tree. It is contained in the tubular structure of the stem; it is liquified by the vernal heat of the sun, and, as connected with heat, *ascends* while it is expanded. The bursting buds give way to this internal impulse, and become the outlets to the rising stream. In course, the actual motion is vertical, while it also apparently retrogrades, as Mr. Thompson has truly described it to do. In fact, there is no other way for its escape; the vessels below are replete with sap, and it cannot be supposed that the roots can discharge *into*, that which it is their peculiar function to imbibe *from*, the earth.

As intimately connected with this curious subject, and which, as Mr. Thompson truly observes, is still "clouded in darkness," I beg to submit a few additional remarks, which may be perhaps worthy of regard in physiological researches. I conceive that the sap of plants is a component *quality* only, not an organ, nor organisable; it pervades the whole living system, and particularly that part called alburnum, which is the organ of vitality. This last invests the whole internal structure of the plant, is elongated downwards into every rootlet, and upwards into every twig, as well as *laterally* expanding itself; thereby increasing the volume of the stems. In this the vital gems are seated: in some cases dispersed over its whole surface; in others at the joints only, as in the vine. The alburnum of one plant readily unites or anastomoses with that of others of kindred nature, as it happens in budding or grafting; it conveys or furnishes the roots of buds already formed (or incipient gems arising from them) into the soil, and retains its vitality, either in a dormant state or in action; expanding its buds or gems for a considerable time after it has been separated from the system of which it was originally a part. This is exemplified in the instances of the growth of fallen trees, of a graft inserted on a dormant stock, referred to by Mr. Thompson. The fibrous residuum (if I may so call it) of the alburnum which remains to become hard wood, originates unaccountably. Whether it is an annually expanding body from the first excrecunt of the seed, or the fibrous descending processes from former buds, is a question which I take the liberty to propose to Mr. Thompson's special notice. That there is a *descent* of distinct organs, or of distinct qualities, is incontrovertible; but which of the two it is remains to be ascertained.

That the stock affects the graft or bud in some cases is well known; but this influence extends no farther than as affecting the vigour of the growth, or the time of ripening the fruit (unless we admit the mysterious report recorded in page 334. of your Fifth Volume now before me, relative to Captain Smith's apple, in the minutes of the Caledonian Horticultural Society); but

that there is an actual and visible ascent of the sap in all healthy plants, while in growth, is also certain, as well as an issue of it in all directions from wounds, whether on the roots, stem, or on the branches.

There is no doubt that the knowledge of this branch of physics has been obscured by both ancient and modern terminology. The young man, whose mind is occupied with notions of the circulation of the sap; its ascent in spring, and its descent in the autumn; its simple state as a pure liquid, and its matured quality as cambium; its organisable properties, &c. &c., will be sadly perplexed while he endeavours to reconcile the doctrines he has been taught, with the phenomena before his eyes. To account for the direct, lateral, and retrograde motions of the sap, he must call to his assistance almost all the powers of nature, before he can form any thing like a rational idea of one of her most common processes.

A clearer view remains to be opened to the young botanical physiologist. No individual has a better opportunity to enter on such a scrutiny than Mr. Thompson himself; and it is to be hoped his brethren will hear from him again, and that he will excuse the liberty I have taken in what I have offered to his notice. — I am, Sir, &c. J. Main. Chelsea, July 10. 1829.

Qualities of Composts and Soils. — Sir, On the very sensible remarks of your correspondent W. R. Y. of Sheffield, p. 404. Vol. II., and your own observations accompanying his communication relative to the qualities of composts and soils, I am induced to hand you a few remarks: —

That there is great variety in soils; that they differ in respect of constitution and qualities; and that plants are variously affected by such constitution and qualities, are universally evident and well known. Their luxuriance and perfection depend entirely on the suitableness of the station: and not only are their characteristic properties liable to be changed, but even, as has been proved by your correspondent, *the colour of their flowers*. Hence the necessity of some test, furnished by the science of chemistry, which would enable practitioners to ascertain as easily as possible the inherent noxious qualities of soils or composts, together with instructions for applying counteracting properties in the preparation for a crop. This, notwithstanding all that has been written by Sir H. Davy and his chemical brethren in France, is still involved in technical obscurity, and consequently out of the reach of plain practical men: so that, as you very properly advise, it would be well worth the attention of some chemist of leisure to collect what is already known, and by experiment confirm or dissipate what only rests on suspicion, in order that some brief manual may be published for general information.

That the colour of the hydrangea is mutable has been long known, and attributed to the qualities of a certain kind of loam found somewhere in the neighbourhood of London; but I am not aware that the peculiar essence has been detected, as it appears to be by W. R. Y. On the subject of the accidental change of the tints of flowers, M. Decandolle (*Hort. Soc. Trans.*) alleges that "blue and yellow are the fundamental types of the colours of flowers, and that they mutually exclude each other. Yellows pass readily into red or white, but never into blue; and blues are changed into red or white, but never into yellow." In the case before us, we observe pink changed into purple by the agency of "the oxide of iron." This fact is curious, and interesting to the practical florist; especially if assisted by chemistry in the application of gaseous or other qualities. It is said that the Chinese florists are acquainted with the secret of changing the tints of flowers, and particularly those of the *Pæonia Moutan*, by the addition of certain qualities to the soil.

As to the aeration of soils, it is incontestible that they are deteriorated by unnecessary exposure to the sun and air. That precious pabulum, or vegetable food, in maiden earth, or even in composts collected and amalgamated with the greatest care, may, by repeated turnings, be completely exhausted, and much sooner than by the heaviest crop! I cannot, as a chemist, describe what those peculiar qualities are; but, as a gardener, I am certain that the best and most nutritious element in soils is fugitive, and, whether aqueous or gaseous, flies off in exhalation: and, as a farmer, I know well that one light, thin, straggling crop, which too freely admits the parching rays of the sun throughout a whole summer, will certainly be succeeded by another thin crop; that a clover ley, which has been mowed twice, is in better order for wheat, than the same would be if constantly divested of its herbage by cattle; and that the ground under a heap of stones, which has lain in a fallow field throughout a summer, will, by bearing superiorly, be visible for the two succeeding crops! So much does the shading of ground preserve its nutritious qualities. Salts, in their concrete or crystallised state, perhaps may remain undiminished in a parched soil, but other substances certainly fly off.

But it is necessary to add, that all soils whatever require occasional fallowing, for the purposes of cleaning from weeds, and pulverisation for the reception of seeds. The summer sun and drought are necessary for the first; and both the summer heat and winter frost are absolutely necessary (on heavy clayey soils) for the last. Such practice is sufficiently obvious; but let it not be imagined that the rays of the sun in summer, or the want of them in winter, can ever add one particle of vegetable pabulum to the staple of the ground.

Spade-ridging wet or clayey land, for the purpose of drying or pulverisation in gardens, and clasp-bouting or back-bouting with the plough in fields, are both judicious practices; but ridging sandy or light soils can do no good any where.

Connected with digging and ploughing, trenching the surface of the ground is one of the most effective operations for securing the prosperity of trees, and indeed of any crop. It not only gives scope for the extension of the deep-rooting plants, complete pulverisation, and admixture of the superstratum, but also for an effect which very often escapes notice; namely, the facility it gives for the ascent of subterranean heat and dew!!! I have used these marks of admiration merely to save you the trouble of placing them; because it is more than probable you will think the expression, if not the idea, a *wild* one.

But let us consider: — It cannot be denied that there is an inexhaustible fountain of both heat and moisture in the bowels of the earth; miners, well-diggers, all attest this. The heat of main spring water is never, summer or winter, at a lower degree of temperature per Fahrenheit than 40°. According to the depth, the heat increases; so that water drawn from the depth of 300 ft. yields a temperature of 56°, and in some instances even a higher temperament. From this grand source of heat and humidity there is constantly issuing forth a united stream of these two elements, in the shape of vapour. Look at the mouth of a well, of a coal-pit, or other mine; observe the steam from the door of an ice-house, cellar, or from any deep excavation in the earth; and last, not least, see how much more copious this vapour is from loose or new-trenched ground, than appears, or can be condensed, on the firm and indurated surrounding surface. If light prevents seeing this, place a well-glazed hand or bell glass on the trenched ground, and another on a gravel walk or road, and then see which receives and condenses the greater share of this

ascending vapour. The roots of plants on trenched ground, therefore, receiving a greater share of both this heat and moisture (and which their prone direction is always in quest of), accounts sufficiently for their superior growth in such circumstances. That this fountain of subterranean heat and moisture is also "the mother of dew" may be easily proven: but, as this perhaps would be trenching on the confines of the constituted authorities of science, I shall desist; though I believe no practical gardener, who has observed what takes place in hot-beds on trenched ground, &c., would hesitate one moment in agreeing with, Sir, yours, &c. — *J. M. Chelsea. Sept. 21. 1827.*

Dove's Dung in Samaria. — During the famine in Samaria, a cab of dove's dung sold for five pieces of silver. Josephus (*Ant. Jud.* 9. c. 4. § 4.) says this was used as a substitute for salt. (*Buckingham's Travels in Palestine*, vol. ii. p. 396. 1822.) In the *Encyclopedia of Gardening*, § 34. you have followed the opinion of Sir J. E. Smith, that it was used for the purpose of forcing some species of vegetable. — *A. G. Near Barnsley.*

The Gardens of Brighton — Sir, In your Gardener's Magazine for this month, I observe that during last August you passed through this town in your route to the Continent, and that you honour us with your passing observations on our state of gardening. You are, I am sure, aware of the different obstacles with which we as gardeners have to contend in this place; the most prominent of which are the rapid increase of buildings which deprives us of the free circulation of air, and the destructive effects of the sea breezes; these last are so fatal to almost all garden productions, that our very market is supplied principally by gardeners residing from one to forty miles from the town. You will readily perceive that under these circumstances it requires some fondness for the pursuit to engage an amateur to attempt forming a garden, and I admit we do not rank high as gardeners. Mankind however are generally stimulated to exertion by encouragement; a horticultural society established here a few years since has done much for us, and I have to regret that, without meaning to detract from the merits of those gardens which you accidentally saw, your attention was not called to some others which, I flatter myself, would not have been entirely unworthy of your inspection. You would at least have discovered a zeal in the pursuit, we should have been flattered by your commendations or improved by your suggestions, and your public remarks might have been applicable to other places struggling with similar difficulties to our own. Should chance lead you again to this town, I beg to call your attention to the gardens of Mr. Gulburd, Mr. Juda, Mr. Tamplin, Mr. Thunder, Mr. Mitchell, and Mr. Strange, all of whom will, I feel convinced, be happy to receive your visit. — *I. M. November, 1829.*

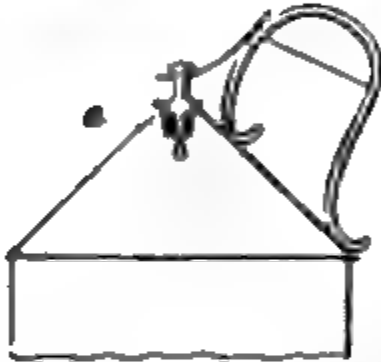
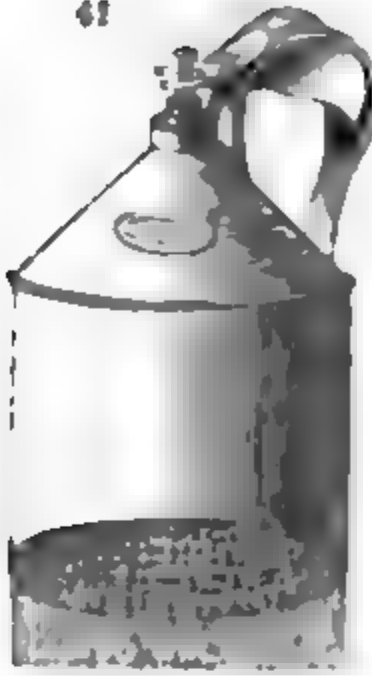
Chemical and Geological Elections of Plants — Your readers are under great obligations to Mr. A. Gordon for his catalogue of American plants, with some reference to their habitats given in Vol. IV. p. 463. of your Magazine. That gentleman would however have greatly enhanced the benefit, had he extended a more particular observation to the chemical nature of the soil in which the several genera and species grow, and favoured us with an account of the results. The deficiency of information in this particular is, however, a failure in which Mr. Gordon is not singular: almost every botanical writer is grievously wanting in this respect. The chemical character of the soil is in almost all instances intimately connected with the texture of the soil, and in that respect influences the vegetables which it bears; but, independently of that circumstance, the chemical composition of the soil exerts a more direct and more important influence on the election which plants have for any given situation, than either the elevation, aspect, texture of the soils, degree of moisture, temperature, or shade. Cultivators will never learn from books what plants are appropriate to their respective situations, until writers on botany and travellers shall designate the abodes of plants by their chemical site, or by their geological site, which includes and pretty accurately expresses their chemical site; instead of referring, as writers of good repute now do, to the adventitious characters of banks, barren grounds, barren pastures, wet sandy places, wet thickets, and the like. A calcareous sand differs as much in its native produce from a silicious sand, as a limestone wood differs from a forest on argil. We have not yet even a book which alludes to the geological or chemical elections of plants, and we pine in ignorance till Mr. Bicheno shall please to give us a guide to that geological knowledge of our native plants, of which he has given us a tantalising specimen in a communication to the Linnean Society. If Mr. Gordon would carry back his recollection to the regions he has visited, I doubt not, he could give us some very important particulars, of which he has left us ignorant. What is the base of the alluvial sand, in which he finds five species of maple to flourish? Is it the detritus of a limestone ridge of hills, or is it siliceous? The vegetable matter we can easily assume to be common to both; yet the compost will afford a congenial nidus to widely different plants. Is his marshy s., which I conceive to be marshy sand, calcareous or siliceous? Or does it mean marshy soil? If the latter, is it purely vegetable, or mere peat or bog? And, if not, are the earthy materials aluminous, calcareous, siliceous, or what other? Are the hills all of similar substance (which is most improbable)? If not, are they of granite, mica slate, gneiss, wackè slate, porphyry, limestone, sandstone, clay chalks, magnesia rocks, coal-measures, or of what other substance? Are they clothed with a thick coat of vegetable matter, or are the plants rooted in the clefts of the rocks, and in the native earths, without much adventitious covering? What is the soil which Mr. Gordon designates as var. s.? and what are the chemical characters of the earthy parts of it? Mr. Gordon's communication is so interesting and important, that I hope he will view with indulgence this attempt to render his observations as extensively instructive and useful as possible. — *Causidicus. Jan. 18. 1829.*

The Term Humane Mousetrap. — Sir, As you applied the term *humane* to my method of catching mice (Vol. V. p. 109.), you must bear the blame of the criticism of Mr. French (Vol. V. p. 724.); for though my method of drowning is not so cruel as that of starving to death, still I did not call it humane. I am, Sir, &c. — *James Rollins. Liverpool, Jan. 7. 1830.*

The Soude, as invented by a Wrexham Mechanic. — Sir, in the last volume of the Gardener's Magazine (Vol. V. p. 656.) you mention a machine called the soude, and say that "one of the simplest, cheapest, and best shower baths hitherto in use may be formed from it." Allow me to lay before you the following extract from a lecture delivered to the Wrexham Artisans' Society by John Murray, Esq. F.L.S. F.G.S., &c., on the 30th of April, 1828, with a note appended to the manuscript of the lecture by the highly respected and talented treasurer and secretary of that Society. I am, Sir, &c. — *Thos. Edgeworth, jun. Wrexham, Dec. 30. 1829.*

"I have to exhibit a very useful and ingenious piece of mechanism made by one of the Wrexham mechanics, who is a member of this Society." (The lecturer here produced a *nursery shower-bath*, and thence took occasion to explain the philosophical principle of its

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author.) The annexed (Fig. 61.) is a representation of the bath; the construction of its valve is shown at a in the section. The vessel is made of sheet iron lined, japanned on its outside surface, the valve is of brass, and it is protected from oxidation or rusting by the contact of strips of zinc plate, a galvanic principle, the zinc being positive to all the other metals employed. The excellence of the shower-bath consists exclusively in its adaptation to the use of the nursery, and its light expense. Its simple principle has been very nearly appropriated to the same purpose, but for the use of adults by the lecturer who published a "Description of a Shower Bath constructed on a principle not hitherto applied to that machine," &c. which are (This pamphlet is No 51 in the Wrexham Artisan's Library.)

It is right to acknowledge that the nursery shower-bath was first suggested by the following quotation from *A Treatise on Druggery, &c.* "in the descriptive account, p. 8. — "The utility of cold bathing as a remedy works into comparative insignificance when contrasted with its importance as a preserver of disease, and as a remover of the distillation when early begun and long protracted in. The shower-bath, so easily constructed in private houses, would be a valuable apparatus to the nursery, whereby a healthy race of children would be sent forth to meet the varied vicissitudes of our climate." Johnson, London, 1800. — In the novel structure of our shower bath the convenience of adults was never considered, they are already more suitably accommodated in a variety of other forms. It was only designed to render the shower-bath more generally available on the nursery. In this respect suitability of our cheap, firm, and convenient of form, advantages inseparable from its object, are so peculiarly possessed by it as to claim for its own the title of the nursery shower-bath, and place that valuable machine within the reach of every one. The method of filling the bath is from below by plunging it into a tub or pail of sufficient diameter to receive the vessel into it) about half filled with water, at the same time holding the valve open to permit the escape of the air from within the bath until it is filled with water, when the valve being allowed to close, the water is supported in the bath by the existing upward pressure of the atmosphere. The child is put to stand in or to hold over a small tub, and the bath is held merely by the hand at any desired height above the height of the child. Besides this there is no preparation, no shutting up as it were in a closet, circumstances which frequently intimidate children more than the bathing itself.

Now, in this case they are scarcely aware of what is going on before all is over. The repetition of the shocks may be made quick, numerous, and light, at pleasure, and, what it can be scarcely necessary to add, either warm, tepid, or cold water may be used, as occasion requires. At the trifling expense of 1 between 10s., parents may now be furnished with a useful and desirable machine, which it is hoped they will no longer suffer their children to be without."

Destroying Caterpillars on Gooseberry Bushes, as practised by the gardener of T. A. Knight, Esq. In obviating this paper you have omitted to state the advantages of applying lime to the base of the stems of gooseberry trees, and that part constituted the whole merit of the paper — T. A. K. Oct 23. 1833.

Real effects of Reaping and Threshing Machines. — Sir, Being a constant reader of your valuable Magazine, allow me to offer a few remarks upon what I consider the bad consequences resulting from the use of reaping and threshing machines in this country. Vol. V. p. 300. In the first place, it is a diminishing of labour, and surely that is not needful in this country, where labourers are so abundant. According to the statement in the Magazine, one reaping machine, with eight men, in one day would do work equal to twenty-four men. You acknowledge "the want of employment is general throughout the country," and will this be a remedy for the baneful evil? From local observation, I can see the mischievous effects of threshing-machines, several being used in the parish where I live. In the vicinity of winter where is the resource of the labourer but on the soil? and consequently, if he is thrown out of employ by these machines, he must come directly to the parish for support. Were there a greater demand for labour, higher wages would be given, which would render the labourer capable of maintaining his family without being obliged, after he has received his week's wages of seven or eight shillings, to go to the parish for his wages to be made up sufficient for their support. And, Sir, Editor, in my humble opinion, these machines will rather tend to aggravate than remedy the cause of distress. Some few individuals may benefit by them, but, according to your very just remark, "No good is worth much that is not good for all." My wish is that the noble may still take the way, and the poor still echo with the well-winded flail. If, for the good of farming labourers, you should think these few remarks worthy of insertion in your useful pages, it would much oblige — A Sub-Gardener Worcester-shire, Jan 9. 1833.

We have inserted this communication to gratify our correspondents, and because we are happy to find young men who think in any way, and are able to express their thoughts distinctly. Having said this, we shall leave A Sub-Gardener to be answered by some of his brethren, simply observing, that every improvement when first introduced has a tendency to injure some class — so that it may be said, that unless it had this tendency it would be no improvement. — Cant.

Treatment of Mr Knight. *The high and equal Education Principle.* — Sir, You would have your readers to believe that you are actuated by the kindest spirit imaginable towards Mr Knight, but many of them must think with me that you have a most strange way of showing it in your remarks upon him, which appear to exude more of acrimony and a censorious spirit than kindness of feeling. However, I will give you credit for not wishing words to that

— Sir, As you have kindly allowed my remarks on the propriety of instructing the labouring classes in music and dancing, and I would now add singing, to appear in the last Number of your Magazine, I intend troubling you again with a few lines, should you deem my observations worthy of your notice. Did I stand alone in my objections to this system of education, I would not, indeed, have ventured for a moment to obtrude myself on your attention; but, knowing it to be the unprejudiced opinion of many of your sober-minded and intelligent readers, that this, as well as every other blessing, is liable to be misused and misapplied, I speak with the greater confidence, and hope you will yet bear with me a little longer. The object of education I conceive to be to enable a man to occupy, with the greatest credit to himself and benefit to his fellow-creatures, that station in life which it has pleased Providence to assign to him; neither holding himself as superior to his employment, which must necessarily cause neglect; nor yet sinking into that abject state of servitude which is only compatible with an uncivilised state of society. The question then is, what sort of education is best calculated to promote this our mutual desire? Doubtless the mind must be matured and cultivated by education, as the body is by nourishment and clothing; and we may add, that it must be cultivated with the utmost discrimination, and such food only administered as shall produce a healthy and vigorous understanding; carefully avoiding whatever may tend to vitiate the taste or corrupt the appetite. The analogy between the growth and perfection of the body and the increase and developement of the mind is exceedingly striking. As the body requires food and clothing in order to its perfection, so the mind must be nurtured by instruction in order to the developement of its powers; and, as according to the quality of the food will be the strength of the body, so according to the propriety of the education will be the strength and activity of the mind. Would you then introduce the superfluous luxuries of the rich into the humble cottage of the poor? Would you attempt to satisfy the cravings of his appetite with those unsubstantial dainties, which rather weaken and debilitate than strengthen and confirm the constitution? Oh, no! Neither then should his intellectual appetite be pampered with vain accomplishments, which would cloy rather than satisfy, would impede rather than promote his progress. His mind should be clothed with the simple but durable garment of common sense, and finished with the "ornament of a meek and quiet spirit, which is in the sight of God of great price." We should do well to remember that there is a "modus in rebus." Consistency should govern all our actions, nor should we suffer ourselves to be carried away by an immoderate flow of generous feelings into any dangerous extremes. Reason should bridle affection, and thus prevent zeal from running into intemperance. The mind, if it is to be productive of real and lasting comfort, must be plentifully supplied with the wholesome food of substantial knowledge: if it is contained within a body destined to fill an inferior station in society, then its improvement must be regulated by the circumstances of its proprietor; unnecessary ornaments and useless embellishments must be neglected, and the attention directed to those things only which shall yield abundantly the happy fruits of an enlightened understanding. However innocent these accomplishments may be in themselves, they most commonly have a baneful influence on the mind; they hold out a strong temptation to waste time, and to associate with bad company. By these means evil habits are contracted; the mind, even of the virtuous, becomes contaminated, the morals corrupted, and the relish for intellectual enjoyment destroyed. Thus are the avenues of vice carefully strewed with flowers; the unsuspecting are easily drawn into them, and, allured by the gay scenery that surrounds them, pass on, ignorant that they are in the high road to destruction. Youth are too apt to judge of things from appearances, and to regard only present enjoyment without casting a glance at their future comfort. They naturally prefer whatever is easiest of acquisition, and it requires no strong arguments to persuade them to follow where they so soon find the "labor ipse voluptas." The leisure hours of the labourer are but few; I would not then that a moment of this precious fleeting blessing should be wasted in trifling amusements, but rather that his occupations should be such as would stand the strict test of a scrutinising conscience. Whilst we are thus boldly emerging from the gross darkness of utter ignorance, let us not be dazzled by the delusive glare of empty knowledge; lest we become blind to our best interests, and in the pursuit of trifles lose sight of the very fundamental principles of a good education.

As the pleasures to be derived from the fashionable diversions are of a far lower cast than what are to be obtained from study and meditation, so are they of an infinitely more transient character. As soon as the dance is finished the enjoyment is at an end, and the mortifying reflections of mis-spent time immediately ensue. Nor is it for lack of subjects worthy his attention that the poor man must thus fill up his vacant hours. Let him be thoroughly instructed in whatever tends to elevate the mind without filling it with vanity; let the whole range of the useful arts and sciences be opened to him, and let him learn the practice of the various necessary trades, that he may not be so totally dependent on his fellow-men for the needful furniture of life. Such is the knowledge requisite for him whose bread depends on the labour of his own hands; such information would be really useful to him, and might be turned to his great advantage throughout life. — *P. R. Guildford, Jan. 26. 1820.*

Washing Salads in Sea Water, I found, completely destroyed all the crispness of the lettuce, and left it as if it had been frosted. — *W. M. Argyleshire, Nov. 6. 1828.*

Designs for laying out Flower-Gardens. — Sir, In p. 570. of the Fifth Volume of your Magazine I read that you intend publishing designs for laying out flower-gardens on the natural system, which I think is rather unfair dealing with your correspondents; for I sent you a communication on the subject of laying out gardens on the natural system, Dec. 28. 1828, and likewise another, April 10. 1829, wishing you to state the advantages of systematic arrangement as far superior to the mixed disordered plans we generally see; which had you done [They are both inserted: see List of Correspondents.], and invited botanists and gardeners to have sent in their plans, as you did landscape-gardeners (Vol. IV. p. 537.), I make no doubt but you would have received a great many plans before this time. But if neither botanists nor gardeners were to be found qualified to commence the task, then, Sir, you would be justifiable in publishing your designs, and free yourself from that self-arrogant monopoly which is the most conspicuous characteristic of a body of self-acting, or rather self-serving, pretended friends to gardeners. Before you proceed any further with your plans try the abilities of gardeners, &c., and give all your correspondents a fair chance, or else a sufficient reason in your next Number. — *J. P. Oct. 14. 1829.*

We shall be particularly happy to receive the description of plans alluded to by J. P., who need be under no fear of our anticipating him. — *Cond.*

The Gardener's House in Bagshot Park. — Sir, From your well-known liberality, and your generous invitation to receive correction whenever inaccuracies occur, which must, in

the nature of things, sometimes happen, I am induced to trouble you with the following lines, in answer to your remarks relative to my house in Bagshot Park.

Nothing, truly, is more likely to promote improvement than plain and disinterested criticism; but I must assure you that your candour and sincerity have led you into a mistake in the particulars of my house. The house stands on a gentle rise one foot above the level of the ground in its immediate vicinity, which I consider quite sufficient to carry off all rain. The subsoil is a gravel, and it is the driest situation within the range of the garden. Having no occasion for the two underground cellars which you mention, that would have been a useless trouble and expense. The bedrooms are not six but eight feet high in the clear. You proceed by stating, that the humane way of keeping the house from obtruding on the walks would have been to have had all the rooms on the ground-floor. Now, in my humble view of the case, even supposing the rooms as low as you state, I would rather be in danger of knocking my head occasionally against the ceiling than of risking the pains of rheumatism, ague, &c., from sleeping on a ground-floor over cellars. I have delayed writing to you hitherto in order that I might prove the dryness and comfort of my new residence; and I am now happily settled in it, and congratulate myself for so great an improvement in my domestic comforts. I am under no inconvenience from damp or any other disagreeable, and find the rooms quite high enough for an honest man to walk uprightly, and therefore feel no disposition to follow your advice in pulling down and rebuilding. Whatever fault, however, may exist in the construction of the house, I believe I must take it entirely on myself. With my best thanks for your kind intentions, I am, Sir, &c. — *Andrew Toward. Bagshot Park, Jan. 5. 1830.*

Hanwell Souring Apple. — Sir, Mr. Lawrence (Vol. V. p. 731.), in reply to an enquiry about the best sorts of apples to be planted in an orchard, recommends a few kinds, of which I will say nothing, as they are, for the most part, nearly unknown to me. Without meaning, therefore, to find fault with his selection, I may be allowed to observe "unus abest," one is wanting, which for its merits is deserving of a place in every orchard, though large enough only to contain two individual trees: I mean the Hanwell Souring, of which a short account will be found in the fourth volume of the *Horticultural Transactions*, p. 219. This apple takes its name from Hanwell, a village on the S. E. borders of Warwickshire, where I conclude it was originally raised. It is recommended as a baking or kitchen apple; and its merits are, that it is a good bearer and an excellent keeper, retaining its flavour and firmness till very late in the season. I have found them very good in the end of July, and have no doubt they would have kept longer had I not had occasion to use them. As the apple is not, I believe, generally known in the nurseries, nor, perhaps, much cultivated out of the midland counties, I shall be happy to send you grafts for distribution, should you think them acceptable. Yours, &c. — *W. T. Bree. Allesley Rectory, Dec. 12. 1829.*

Our correspondent has sent a few grafts to Mr. Charlwood's seed-shop, Great Russel Street, Covent Garden, which Mr. Charlwood will distribute among the trade. — *Cond.*

The deterioration of Orchard Fruit. — When I first read Mr. Knight's book on this circumstance, I was a convert to his opinion. Since, then, however, I have observed that the same trees which from their decaying appearance seemed to justify his assertions are now recovering, and promise restoration to former vigour. This, then, would seem to have been a temporary defect, rather than a general failure. — *Superficial. Feb. 1829.*

Bailly's [French] Pamphlet on ringing Fruit Trees. — This is a very old affair; it is mentioned in Loudon and Wise's translation of the *Jardinier Solitaire*, p. 22; and being in italics, it is probable was an addition of their own. They mention it as having been tried ten years before, and that though some trees had perished from the operation, many had borne it without damage, and had in consequence become more fruitful. — *Id.*

Preservation against Insects. — This, it was supposed, could be effected by boring a hole in the stem or branch of an infected tree, filling it partly with quicksilver, and plugging it up. The destructive quality of this mineral was expected to diffuse itself throughout the whole structure of the plant, and in course destroy or offend the insects. But this expedient has been found to be completely nugatory. — *Id.*

Mr. Harrison's method of pruning the Peach and Nectarine. — Sir, Observing in p. 55. an article on the pruning of peach and nectarine trees, by Mr. J. H. Newington, in which mention is made of the mode of treatment practised upon the peach and nectarine trees at this place by my father when gardener here, and that such practice Mr. Newington considered a bad system, I beg leave to inform him, through the medium of your Magazine, that the same principle which he recommends, and upon which it is stated his trees are pruned, is that which has uniformly been practised here for many years, and which is minutely described in the *Treatise upon Fruit Trees*, published by my father; upon the perusal of which Mr. Newington would find it systematically and clearly stated, or by viewing the trees at this place, or in the gardens of the Earl of Egremont, Petworth House, Sussex, where my father is now gardener, he would find it in operation. The uniform system acted upon by my father in the treatment pursued with all fruit trees under his care, "but particularly with peach and nectarine trees," has been, as far as practicable (keeping in view a supply of healthy bearing wood for succeeding years), to divest the trees of every shoot, or part of a shoot, that could possibly be dispensed with. This is strictly attended to in the spring dressing of the young shoots, and in cutting away the shoots in May or June; also by the early autumn pruning of the trees. The attention thus paid is not performed in a random manner, but systematically done. Permit me to add, that the same system, acted upon here, has not only been abundantly successful at this place, but, having been pursued in many other situations, and in some such as Mr. Newington considers unfavourable, in none has it failed for a season that I have heard of; but even in very unfavourable seasons has been uniformly successful. If the trees be planted, pruned, and otherwise attended to as directed in the treatise already mentioned, the same advantages will be realised which have attended its practice here. I am, Sir, &c. — *Joseph Harrison. Wortley Hall, Feb. 5. 1830.*

Mr. Newington's Remarks on training the Peach Tree. (p. 55.) — Sir, Mr. Newington says that he has frequently heard complaints from gentlemen, with the confession of gardeners themselves, that they are more deficient in the management of the peach than in most other parts of their profession. It is true that there is an equal degree of skill required with the peach as with most other products of the garden; but this does not prove that "every cultivator" of the peach is less acquainted with its culture. Mr. Newington says, "the failure of these crops arises from the manner in which they prune their trees," and that "it is the endeavour of every

cultivator to procure annually a great supply of long and strong wood, sufficiently large to make basket rods, and from these he expects his crop." Mr. Newington ought to be aware that there is no gardener who does not know that the system is erroneous and unnatural; and he also knows that this statement of his is ungenerous and untrue. What! with the directions of a Miller, a Smyth, a Nicol, a Knight, a Hayward, a Macphail, a Harrison, with the numerous publications in our day? Indeed, if he is right, you, Sir, must have had many numskull readers, or else you would have told them better before this. What will the braw lads of Scotia say, when they are told that a brother has discovered, in the year 1829, that they all prune their trees in order to produce, and expect their crop of peaches from basket rods? I think they will tell him that for at least 100 years a very different method has been pursued. His observations on the peach trees in Malta and America cannot apply to the British gardeners' practice in their culture in the open air of Britain. Standard trees in hot-houses and trees in pots are those only that will bear any resemblance to the trees he has mentioned; so that here "the British gardeners' practice" will not be so soon condemned as he imagines. Mr. Newington considers Mr. Harrison's a "bad system of pruning," but the frequent production of good crops of fine-flavoured fruit, with the healthful vigorous state of the trees at Wortley, has been so well attested, that Mr. Harrison's method is considered of great excellence. Mr. Newington's method of "shortening back to a few eyes a considerable number of young spray" (or summer shoots) in summer, would be ruinous to peach trees; for if the trees are well established, it takes a whole summer to swell off and ripen their shoots in the open air of Britain. The "long and strong" shoots Mr. Newington speaks of, are the only ones that will bear his mode of treatment; but as the peach tree bears transplanting so well, a few careful transplantings will reduce them to a regular degree of growth. I presume that he has not seen all the newly invented materials for the protection of fruit tree blossoms, or else he would not give preference to old fishing-nets. Mr. Newington is quite right in disapproving of the bad method of cropping fruit tree borders with "gross vegetables;" but he is equally wrong in recommending mignonette, or any thing else that makes a compact surface to the border. There should be at all times a circulation of air on every part of the border, which should never be cropped within one yard of the wall. If Mr. Newington's trees are planted in the kitchen-garden, and the borders managed and cropped as under, other things being the same, the trees will remain healthful and vigorous a long time. In November, when the leaves are all fallen, unnailed the trees, leaving nails sufficient to hold the shoots fast to the wall. Stretch a line lengthways 1 yard from the wall, and with a fork throw the soil up carefully into a ridge, and so proceed till all is done, which, if the border is 12 ft. broad, makes four ridges. Having saved in a dry place a quantity of the droppings of pigeons, hens, &c., proceed to throw it on with the hand, on the surface of the border. This, by being applied annually (the border being well drained, and on a good subsoil), will keep the soil in good heart without any other manure. In February level down the ridge next the wall, and place a trellis 18 in. wide, formed of rough spars 3 in. wide, nailed on cross pieces of wood; the inner edge of the trellis 18 in. from the wall, which will keep all plants sown on the border 1 yard from the wall. It has been a common practice to prick out in autumn, at the foot of the wall, lettuce, cauliflower, &c., but these can be better protected under hand-glasses, which are mostly standing idle at this season of the year; neither is this a good place for them to be matured in spring, as the soil becomes so soddened during winter as to prevent the roots penetrating for sufficient food. Cast-iron trellises have a neat appearance, but any rough wood will answer. The proprietor of the garden can walk and examine his fruit at all times, and the gardener can do the necessary work; and as the soil is loose under, it receives moisture with more certainty. At a proper time the border may be levelled, and the following vegetables sown in drills, keeping the soil frequently stirred between the rows, viz. onions, garlic, shallots, radish, lettuces, endives, rampion, spinach, &c. These vegetables must be all removed by the first of November. The greatest evils gardeners have to contend with, are the first three enemies Mr. Newington has mentioned. If he can remove these, he will confer a lasting benefit on gardeners. I remain, Sir, &c. — *James Hauman, Gardener. Toft, near Knutsford, Cheshire, Feb. 12. 1830.*

Defect in the Ripening of Grapes.—Sir, Your correspondent, Mr. Archibald, has described a defect that took place in his vineries, some years ago, when the grapes were approaching a state of maturity; and Mr. Judd has also given the subject his consideration. It is of the utmost importance to the grape-grower to ascertain the real cause of this very prevailing disease, that he may guard against every circumstance having the least tendency towards so fatal a result.

Mr. Archibald attributes its origin to a deficiency of fibres; Mr. Judd to an over-moist atmosphere, and the palliative he recommends is, a more early and regular admission of air, previously to the atmosphere of the interior of the house being too much heated; or, as he considers, before the cuticle of the berries is scalded. But I think Mr. Robert Fletcher's system of cultivation gives this opinion the negative as he is by no means particular in the admission of air (Vol. I. 254.), and the superior grapes he produces are convincing proofs that nothing is radically bad in his practice. There may be more than a plausible pretext for the doctrine of Mr. Judd. The opinion of so distinguished a cultivator deserves its merited portion of attention and respect; yet, with all deference to that gentleman, I cannot admit the justness of his reasoning. My own opinion, grounded on experience, coincides with Mr. Archibald's view of the subject, considering the fundamental defect to lie in the *radiculae*. When the efficient members are diseased, it is a natural consequence for the subordinate parts to suffer; and every possible precaution ought to be used in guarding against circumstances which may have the least possible tendency in producing a disorder in that part by which the vegetable world is nourished and supported, viz. the root. But here I cannot exonerate my practical brethren from blame; for they have long pursued a system which, certainly, is now partially, but ought to be universally, abjured and repudiated by every gardener alive to the improvements in his profession: that is, the cropping of borders, particularly that of the vine, with vegetables, thereby depriving the roots of the primary occupant of the due action and influence of the sun's rays. From its advantages over the other parts of the garden in accelerating esculent productions, every advantage is taken of the vine border, never calculating the injurious effects such a system is sure to produce: but to the observing cultivator and scientific physiologist, this practice will at once appear fraught with the most dangerous consequences to the vinous production from the border. In my humble opinion it frequently is the anterior cause from which originate many defects in the vinery. But one fact is worth a volume of theoretical speculations, and I am furnished with one in point. A friend of mine, who has the management of extensive gardens, for several years suffered less or more in his crops of grapes in the same manner as described by Messrs. Judd and Archibald. I happened to visit him in the beginning of June 1816, when his grapes had suffered to a very great extent. On

examination I found the borders completely covered with a heterogeneous mass of vegetables, which, at my suggestion, were immediately cleared away, and the border pointed over. Since then the vine border has been held perfectly sacred, and in 1827 very few of the grapes suffered; and, from a letter received from my friend a few days ago, I understand that, during the summer and autumn of 1828, the grapes have invariably remained perfectly sound, the last being cut on the 18th ultimo (December); and I venture to assert, grapes have a greater tendency to shrivel in such a season as last, owing to the humidity of the atmosphere, than generally occurs in such summers as those of 1825 and 1826. This circumstance corroborates my opinion, that the defect originates from the incapacity of the absorbent orifices of the fibrillæ to imbibe the nutritive juices requisite for the well-being of the vegetable dependent on this source for life and vigour. As there is naturally a deficiency in the solar influence during such a humid season, so, consequently, the soil becomes sour and unpalatable to the roots that depend on it for their vivifying aliment. When these natural defects are artificially extended, which is the case from cropping the border with a dense mass of vegetables, a corresponding share of disease may naturally be expected. But, independently of the effect in depriving the border of the influence of the sun's rays, there is another consideration which ought to operate as a serious objection to the cropping system, the injury the border suffers from the impoverishing nature of the crops generally cultivated. Yet, so tenacious are the generality of gardeners of this absurd practice, that for a partial and evanescent benefit they sacrifice the principal object, and thus, *con amore* for their favourite system, they keep on from year to year; the results are bad crops, or good crops spoiled. — *Alexander Gordon. Apsley Castle, Jan. 16. 1829.*

Verbena Melindres Bot. Reg., *chamædrifolia* Sweet. — Sir, Observing in the Gardener's Magazine, Vol. V. p. 106, a communication to you from Mr. Perry, gardener at Bignor Park, Sussex, in which he appears to be very anxious to communicate to the public, as extensively as possible, by whom the *Verbena Melindres* was introduced into this country, and by whom the first plant was raised; also, as to how it came into my possession, and the subsequent manner in which I took the liberty of disposing of a specimen of it when it bloomed at Petworth, and from which circumstance (though unintentional on my part) it was afterwards figured in the *Botanical Register*; in order to forward Mr. Perry's object, and to correct some errors in his communication, as well as to afford him some degree of satisfaction, by proving to him that I have been more grateful for the favour of having the *Verbena Melindres* presented to me, than is imputed to me in his statement sent you, I beg the favour of you, Sir, to allow me the privilege of endeavouring to prove as extensively "as Mr. Perry has circulated my want of gratitude," that I have, in the way desired by him, evidenced my sense of regard for his kindness. Early in March 1828, Mr. Perry called at Petworth Gardens, and, whilst I was in the act of ridging out some cucumber and melon plants in frames, he came up to me and very obligingly said he had brought me two cuttings of seedling verbenas, stating that he had raised them from seeds sent by a gentleman from Buenos Ayres, in 1826. It was in this way the *Verbena Melindres* came into my possession, and at no other time did I ever receive from Mr. Perry either a cutting or a plant of it. On my going up to the horticultural fête in June following, I took a specimen of it in bloom to show to some of my friends, and having the favour granted of exhibiting it to some members of the Council of the Horticultural Society, they very much admired it, and as it was presented to them they had an undoubted right to dispose of it as they pleased, without asking either myself or any other person for leave to do so; this circumstance led to its introduction into the *Botanical Register*. Shortly afterwards application was made to my father from the Horticultural Society, for information relative to his knowledge of the history of the *Verbena*, and how it was received into Petworth Gardens: the substance of his reply was, that it came into his possession the preceding spring, by a cutting presented by Mr. Perry, gardener to John Hawkins, Esq., Bignor Park, Sussex, and that Mr. Perry had told me he had been successful in raising it from seeds sent from Buenos Ayres in 1826. If Mr. Perry had been as candid as he considers I ought to have been in stating from whom I had the plant, he probably would have taken a much readier method, and one far more to his credit, of obtaining information that I had done so, and he then might have omitted in his communication the assertion, that I (not any other person) had not stated from whom I received it.

During the summer of 1828, Mr. Perry, accompanied by two other gardeners, called at Petworth Gardens, and (it may be as he states) he named his intention of getting it figured; but if it was mentioned in the course of conversation in going round the gardens I do not recollect it; but admitting I had heard it so stated, I cannot see any necessity I was under to inform Mr. Perry what I had done with what I had given to others. The cutting was not given to me with any stipulated conditions, but unconditionally; I therefore considered I was entirely at liberty to avail myself of the privilege Mr. Perry considers I had a right to. If Mr. Perry chooses to dictate about others, I beg to be excepted in future, and thus be saved the trouble of writing to, and presuming upon the kindness of, my friends, as I fear I am now doing in transmitting this to you. I am, Sir, &c. — *George Harrison. Petworth Gardens, Feb. 26. 1829.*

Pentstemon glauca and *speciosa* should be written *P. glaucum* and *speciosum*, as in Lindley's *Botanical Register*. Graham, I perceive, makes it masculine. — *George Penny. Epsom, Feb. 12. 1830.*

Celery. — Celery, Salisbury says, in his *Botanist's Companion* (vol. ii. p. 102.), "should be used with great caution, if grown in wet land, as it has been considered poisonous in such cases." Does not this deserve the consideration of those who recommend in its culture an imitation of its native ditches? — *E. H. of Stafford. Dec. 10. 1829.*

ART. IV. Queries and Answers.

NAMES of Secretaries of Provincial Horticultural Societies. — Sir, I beg, through the medium of the Gardener's Magazine, to suggest the usefulness of the secretaries of provincial horticultural societies sending their names and addresses for insertion in that publication. My object in throwing out this hint is to facilitate communications with each other. I should have found a great advantage in it at this time, being desirous of ascertaining the mode of appointing and remunerating judges at the various shows of any repute or extent in the kingdom; but, on referring to the accounts of such shows in the Gardener's Magazine (which our society

has taken in from its commencement), I cannot ascertain who are the official persons to apply to. Perhaps this hint (if you think it worth insertion), will induce the secretaries of provincial societies to send their names and addresses. I am, Sir, &c. — *W. G. Ashton, Honorary Secretary of the Cambridgeshire Horticultural Society. Bridge Street, Cambridge, Dec. 11. 1829.*

If all the secretaries of British horticultural societies will send us their names and addresses, on or before the 1st of May next, we will publish them in an alphabetical list in our June Number. — *Cond.*

Provincial Horticultural Societies. — Is the Editor of the Gardener's Magazine in possession of any copies of the rules of provincial horticultural societies? if so, has he a sufficient number to collate, and from the collation can he not show, better than by a letter from *W.*, an original subscriber, the fundamental principles on which those institutions are in general founded? Or, if *W.* sends his opinions, can the majority of rules be tried by them, without such a previous collation. *W.* is convinced that much money is squandered by the societies in prizes, not given solely to skill and merit, because not regulated by fair competition among individuals in circumstances strictly similar, or for objects of sufficient importance in a national view. — *W. Feb. 11. 1830.*

We entirely agree with our correspondent, that much money is squandered by horticultural societies, of which the recent disclosures at the London Horticultural Society afford proof sufficient; but we have neither leisure nor inclination to enter on the subject of their reform farther than in a general way. — *Cond.*

A Chimney-sweeping Apparatus. — It is common about London to bring down, or drive out by the chimney-pot, the soot of the chimneys of furnaces and boilers, by discharging a gun in them. Might not chimneys in general have the soot driven out at the top by discharging condensed air in them below? If a proper condensing machine were procured, the soot of the throat of the chimney swept down by hand regularly once a week, and afterwards the conductor from the condensing machine introduced, might not the remainder of the soot be blown out by the chimney-pot? If not blown out, it would be loosened and fall down; and, if one operation were not sufficient, two or three might be used. Possibly some sort of puff or brush might be blown through. — *C. May 1829.*

Heating by Hot Water. — I observe, in Vol. V. p. 544. of the Gardener's Magazine, an improvement in the mode of heating houses by hot water, made by Mr. Weekes, which appears perfect, if the steam or vapour from the hot water in the tube or broad plate can be confined. Whilst reading this, it occurred to me that you, or perhaps your ingenious correspondent, Mr. Bierly of Swansea, might be able to inform me how heat may be effectually cut off in the hot-water system, where one boiler serves for two houses. The valve I have made use of in my reservoir for that purpose was lined with leather, which soon was found faulty, and lead was substituted but does not answer the purpose. I have a similar valve in my boiler, to stop the circulation at pleasure. I put up my apparatus under the directions given in your Magazine, with the assistance of a common bricklayer, and a very clumsy hand from the foundry where I ordered my castings; this man could not secure the joints of the cylinders, which here and there still leak, though he has made two attempts to stop them. About twelve months ago, I noticed, in your Magazine, an account of a patent taken out by some person at St. Albans, for heating walls; I also noticed it amongst the lists of patents to be taken out in the *Journ. of the Arts and Sciences*, but hitherto no specification has, I think, appeared. Is it your opinion that hot water could be intended by the individual in question? and do not you think that I could, by lateral pipes from my boiler, heat a wall of 20 or 30 ft. in length, constructed for the purpose? [Doubtless.] My vinery is only 42 ft. in length, with a glass division, the cylinders 4½ in. diameter, and the boiler and reservoir capable of containing 18 or 20 gals. I have no doubt in my mind that it might be accomplished, but an effectual valve or stop-cock is necessary, and I should esteem it a favour if you could give me any assistance in accomplishing this object. I am, Sir, &c. — *William G. Walmesley. The Plats, near Wigan, Oct. 26. 1829.* Apply to Mr. Cottam. — *Cond.*

Water Rats. — Sir, If any of your correspondents would point out a good mode of destroying water rats on pond heads, it will much oblige a subscriber to your Magazine if you will insert it in the next Number. — *A. B. April 25. 1829.*

Sayings as to Bees. — Is the following current in any other county than Norfolk?

A flight in May is worth a load of hay.

A flight in June is worth a silver spoon.

A flight in July is not worth a fly.

— *Samuel Tyssen. Narborough Hall, near Swaffham, Norfolk, Feb. 1. 1829.*

The Wood-louse devouring Nectarines. — I had this season a fine young red Roman nectarine, upon which an excellent crop of fruit set. Just as they were beginning to soften, they were attacked by numbers of a kind of insects which are known in Scotland by the name of *slaters* (the woodlouse, or *Oniscus*). These insects almost invariably attacked the fruit near its stalk, and devoured a great portion of its pulp, which shortly after shrivelled, and dropped off without coming to maturity. By this means I lost almost the whole crop of beautiful fruit. Although I hung up bean stalks, I could not entrap any of the insects, which always retreated to the crevices of the wall on being disturbed. I shall feel much indebted to any of your correspondents who will point out a method of preventing such damage occurring in future. — *John Ferme. Hadlington, Dec. 16. 1829.*

The Caterpillar on the Oak Coppice. (Vol. V. p. 610.) — Sir, I should think it must be the caterpillar of the *Phalaena viridana* (see Albert's *Hist. Inst.*, pl. 72. under fig.), that made such havoc on the leaves of the oak coppice, as related by Mr. Owen (p. 610.); and the moth, Mr. Owen saw, the insect in its perfect state. Whether fumigation in severe frosty weather, in the depth of winter (taking care that the fire is extinguished before night), under the trees, or in the early part of the spring, would destroy the eggs or not, I leave to the consideration of those much better qualified to inform the enquiring mind, and thus advance the progressive state of knowledge from minute objects to those of greater importance and benefit to mankind. — *Thos. Hawkins. The Haw, near Gloucester, Oct. 21. 1829.*

Caterpillars. — What will destroy those common ones which infest gooseberry and currant bushes? I have tried very strong lime water, lime, and tobacco water, soot, soap-suds, sulphur, and ammoniacal liquor, but all failed. — *J. M. Brighton, Nov. 1829.*

There must be some mistake as to the strong lime water; for we can affirm, from almost daily

experience, that strong lime water will kill every kind of caterpillar, and even worms, snails, lizards, frogs, toads, snakes, and fishes. — *Cond.*

Caterpillars on the Constantinople Nut. — Sir, I shall feel greatly obliged if you or any of your correspondents will give me a little information, through the medium of your Magazine, respecting a peculiar sort of caterpillar, which has this season attacked with great severity, at this place, the Constantinople nut trees (*Corylus Colurna*), and divested them of nearly all their leaves. The colour of the insects, when full grown, is of a light transparent green, intermixed with golden yellow, black heads, and rows of black spots up and down their bodies. They grow to a much larger size than those which infest the gooseberry and currant bushes, and are first observed by eggs stuck fast to the veins on the back of the leaves. After gaining animation, they fasten themselves on the edges of the leaves, with their extremities curled upwards, and in a short time reduce them to skeletons. We have several sorts of nuts here, and not one has been attacked except the above-mentioned sort. — *J. Smith. Cantley Hall, near Doncaster, Oct. 20. 1829.*

An Insect infesting the Plum and Cherry. — In the garden of Sir Charles Taylor, Bart., of Hollycombe, Sussex, near Liphook, Hants, some trees on the wall, of pear, plum, and cherry, have for about six years past been infested with an insect unknown to all my gardening friends, nor have they elsewhere seen it. The perfect insect I have never been able to discover, although almost daily, during the months of July, August, and September, looking after the larva in order to destroy it, unless the insect herewith sent, caught yesterday on a pear tree, lately infested with caterpillar, is it. A specimen of the larva I also take the liberty of sending to you with a few of the leaves on which they have fed. An attempt I made some time ago to confine the caterpillar, supplying it with leaves, in order to observe the change to the perfect insect, proved unsuccessful, the caterpillar dying on the leaves. I could never find the insect in the pupa state, nor could I ever discern an egg; for its first appearance to me was a small black point, with a tail, apparently a perfect caterpillar, generally solitary. On closely examining the under side of some pear tree leaves that had been partly eaten by the caterpillar, I this morning found a dry cover, which I take for the skin of the pupa or chrysalis; such as it is I also send. I am unable to discover the insect in your *Encyclopædia of Gardening*. I am a subscriber to, and an admirer of, the Gardener's Magazine, and a reader of the Magazine of Natural History, and a notice in either of the last two works of the accompanying insect, if worthy of a place, would confer an obligation on, Sir, &c. — *John Thom. Hollycombe, near Liphook, Hants, Nov. 1. 1829.*

Sir, I have examined your insect, and believe it to be *Cryptus instigator* of *Fab. Syst. Pierat.*, p. 85. No. 61., or a variety of it, with the posterior tarsi darker than usual. This insect is not the enemy of the fruit trees, but the parasitical destroyer of *their enemy*. One only of its larvæ would live in one large lepidopterous larva, which last probably was the devourer of the leaves of the trees in question; and the way to find this destroyer of leaves would be to seek it at midnight, when feeding, by candle light; or by day, lurking either under leaves, stems, or, more likely, under hiding matter on the ground near the wall, or stumps of the trees. I remain, &c. — *A. H. Haworth. Chelsea, Nov. 7. 1829.*

The technical Name of a Cape Plant. — Sir, Can you or any of your correspondents inform me of the botanical name of a plant, the following meagre notice of which I find in *Grant's History of the Mauritius*, p. 51. :—"A reed that does not exceed the size of a large hair, and bears a bunch of white and blue flowers, which, at some distance, appear to be floating in the air; it comes from the Cape." — *Philagros. Jan. 31. 1830.*

Collection of American Plants. — Where could I purchase the cheapest and most complete collection of American plants. An answer to this will much oblige your constant reader. — *L. L. Ireland, Jan. 1830.*

Try the Woking nurserymen, and particularly Mr. Waterer, who has the best collection of azaleas in the country; many of the kinds are of unrivalled beauty, and having been raised by himself from seed, are not yet given out to the trade — *Cond.*

Gram is said to be much used for feeding poultry, horses, and cattle in India; it is a sort of pea, but I should be glad to know its scientific name, and whether it is cultivated in this country. — *G. Jan. 29. 1830.*

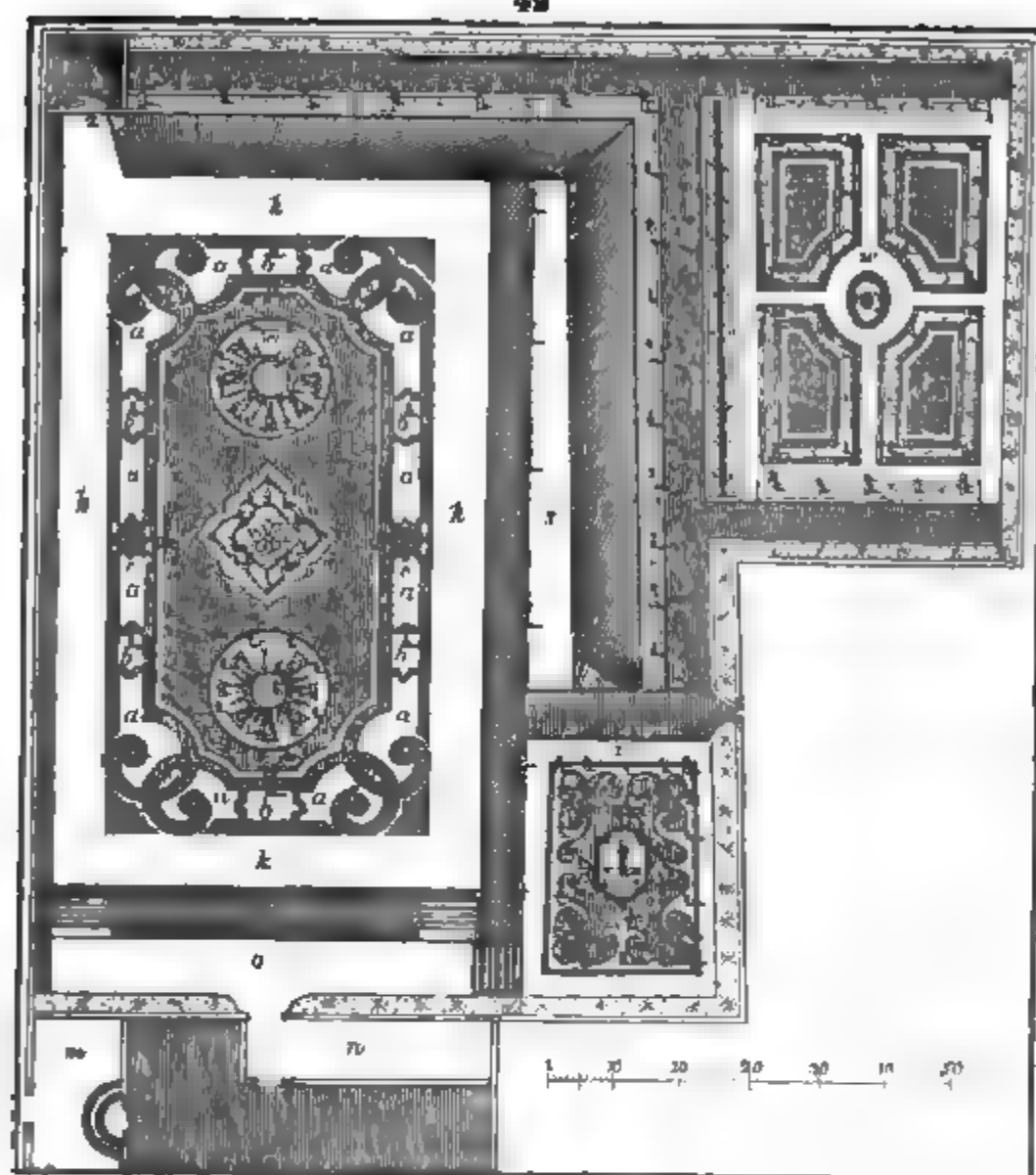
Marshal Tallard's Garden. — Sir, In reply to a correspondent in a late Number of your Magazine, who makes enquiries respecting the celebrated garden of Marshal Tallard at Nottingham, which was in its time considered as the model of French taste in gardening, I beg to inform you that I have met with a description of it in a book, which I presume to be rather an uncommon one, as it is not included in the catalogue of English works in the *Encyclopædia of Gardening*. The following is a copy of the titlepage: —

"The Retired Gardener. In 2 volumes. Vol. 1., being a translation of *Le Jardinier Solitaire*, or Dialogues between a Gentleman and a Gardener, containing the methods of making, ordering, and improving a fruit and kitchen garden, with many new experiments, from the second edition, printed at Paris. Vol. 2., containing the manner of planting and cultivating all sorts of flowers, plants, shrubs, and undershrubs, necessary for the adorning of gardens; in which is explained the art of making and disposing of parterres, arbours of greens, woodworks, arches, columns, and other pieces and compartments usually found in the most beautiful gardens of country seats. The whole enriched with a variety of figures, being a translation from the *Sieur Louis Liger*. To this volume is added a description and plan of Count Tallard's garden at Nottingham. The whole revised, with several alterations and additions, which render it proper for our English culture. By George London and Henry Wise. London. Printed for Jacob Tonson, within Gray's Inn Gate, next Gray's Inn Lane. 1706."

Messrs. London and Wise, in the preface to this work, state that the two French works were *Le Jardinier Solitaire*, the author whereof had concealed his name, and *Le Jardinier Fleuriste et Historiographe*, written by the *Sieur Liger* of Auxerre; that Mr. Tonson got them translated, and that they revised and corrected whatever they found directly contrary to the practice in England.

The original treatises are both particularised in the list of French works on gardening in the *Encyclopædia*, where the former is attributed to Francois, one of the brothers of the Chartreuse at Paris.

At the end of the 2d volume of the *Retired Gardener* are a plan and explanation of *M. Tallard's garden* in Nottingham (*fig. 42.*), of which the following is a copy: —



- "1. The plan of the house.
 a. The little court at the south entrance.
 b. The little yard to come out of the house into the terrace.
 c. The terrace and border next the house and yard.
 d. The steps, verge, slope, and footing of grass.
 e. The parterre, consisting of one oblong quarter of grasswork, which we call a fund of grass, upon which many varieties of works are cut out, as angles of several forms, squares, circles, semi-circles, ovals, and branch-works; all which composed together, the French call *Gazon coupé*, and we cutworks in grass. These cutworks are covered with varieties of colours: for example, — a is covered with red sand or brick dust, b with the slug of pit coal fine beaten; c with a yellow sand; d with spar that comes from the lead mines, or cockle shell, beaten very fine; f are verges of grass; g, grass at the corners, h, the grasswork of the quarters, i, the gravel walks, which are covered with the finest gravel that can be got, and of various colours; some are bright, some a yellowish brown, some greyish, &c., as the country affords. At the several centres are pots and plants.
 j. A slope up from the parterre.
 k. A gravel walk, with a verge of grass and flower pots.
 l. The second slope up to the second level.
 m. A flatwork of grass, with a border on the south side, upon which are pyramid plants and pots; the borders are adorned with plants and flowers. On the same level is a border and hedge, which is the boundary of the second parterre.
 n. Four quarters, with verges of grass, borders for pyramids and flowers, verges of grass within, and white lines of spar; then the four grass quarters, gravel walks, and an oval centre of a grass verge and border.
 o. The third parterre, which lies under the other levels, and consists of cutwork in grass, of pots, and standard evergreens at the centres, a fountain in the middle, gravel walks round the quarters, with two borders at the side for flowers.
 p. The upper terrace being a grass walk with a border of pyramids and flowers on the east side, and a border of flowers next the west side.
 q. The banqueting-house.
 r. The way into the cellar under the banqueting-house."

Marshal Tallard was taken prisoner by the Duke of Marlborough, at the battle of Blenheim, in 1704, and remained a prisoner on his parole, with liberty ten miles round Nottingham, several

years. Deering, in his *History of Nottingham*, published in 1750, says, that "there were very few gardeners, and those but indifferently skilled in their art, till after the arrival of Marshal Count Tallard, and the rest of the French prisoners of war (who were persons of rank), in Nottingham, when encouragement was given to men of industry to render themselves useful, by raising all kinds of garden stuff, in which now they were come to a competent perfection, and notwithstanding they are increased to above four times the number they were formerly, yet can they all get their bread; and in summer peas and beans would be hardly sold at a reasonable rate, were it not that the Newark gardeners think it worth their while to come to this market twelve long computed miles.

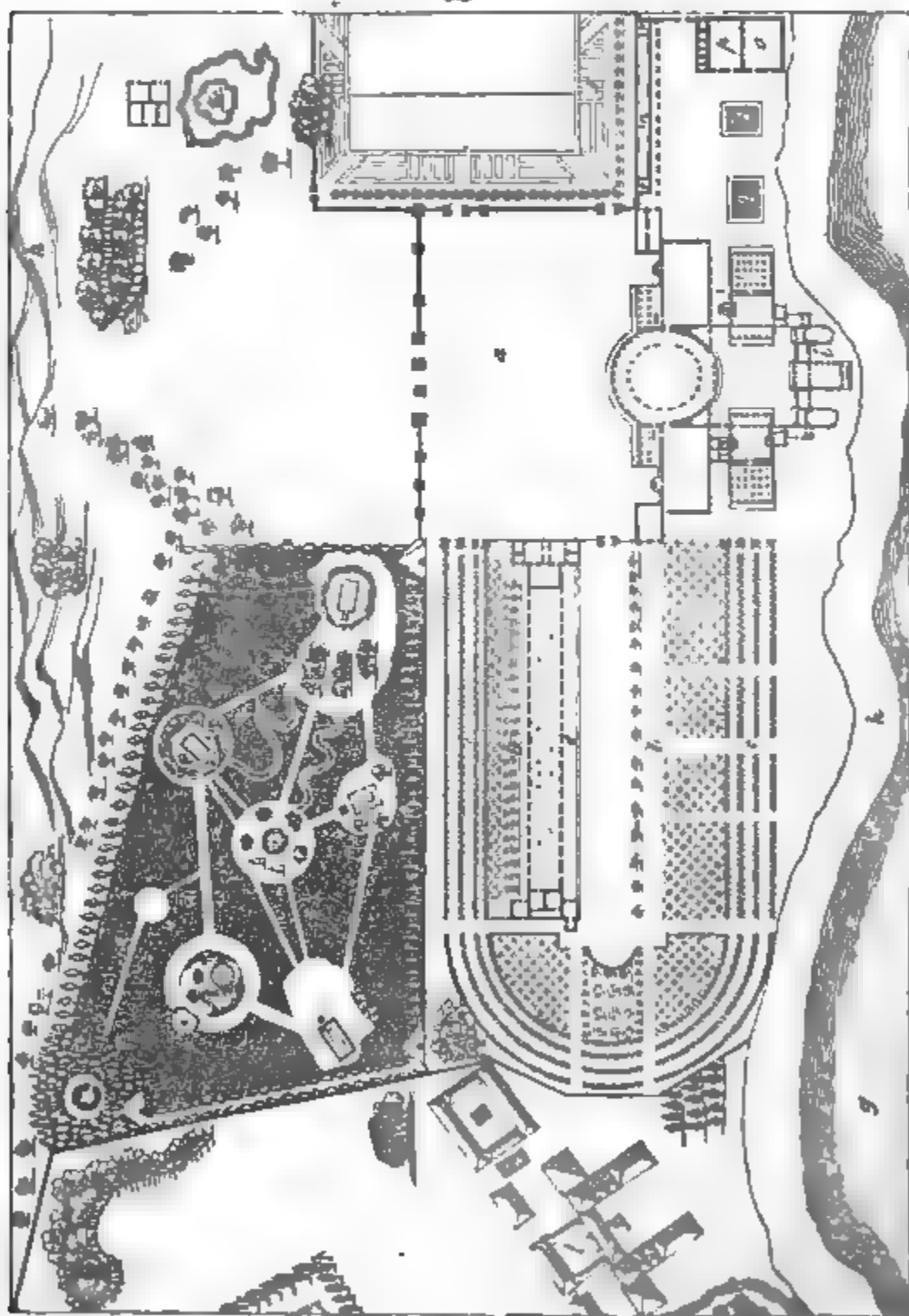
"Our bakers have likewise resped the advantage of making French rolls as well as they are made in London."

It is supposed that the cultivation of celery was introduced by M. Tallard, who found it wild in the neighbourhood of Nottingham.

The house in which Count Tallard resided is still standing at the top of the Castle Gate, Nottingham, in good preservation, and is now the residence of Mr. A. Holins. Part of the garden has been built upon, the remainder is converted into a modern grass plot and flower-garden, but several large trees are standing adjoining the street, which may have been planted by Marshal Tallard. I am, Sir, &c. — J. P. Nottingham, June 7, 1828.

Laying out a classical Residence.—Sir, I have purchased twenty acres of land on the coast, not a great way from Sittingbourne in Kent, and being a great admirer of Grecian

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architecture, I intend building a house on it in that style, and if possible laying out the grounds in a manner which might be considered by my friends as classical. I am no classical scholar myself, and therefore do not know much of what has been done in this way either by the ancients or moderns; but I venture to ask you for such information as you can conveniently give, and for a reference to the best books on the subject. Trusting that my queries are fairly within the limits of that part of your work set apart for this purpose, I remain, Sir, &c. — *Romanus*. Dec. 3. 1829.

Our correspondent may consult Castell's *Villas of the Ancients*, *Pliny's Letters*, and above all G. Laing Meason's *Landscape Architecture of the Great Painters of Italy*. From the first named work we give the plan (fig. 43.) of Pliny's Laurentine Villa, the situation of which was analogous to that in contemplation by *Romanus*.

a, Atrium, or court of honour.
b, Hortus, or pleasure-garden.
c, Gestatio, or place of equestrian exercise.
d, Vineæ, or vine garden.
e, Xystus, or terrace.
f, Hortus pinguis rusticus, or kitchen-garden and orchard.
g, Mare, the sea.
h, Littus, the shore.
i, Gymnasium, or place of exercise.

k, Sylvæ et montes, woods and hills in the distance.
l, Villa vicina, adjoining villa.
m, Equilia, stables.
n, Tecta vehiculis, carriage-house.
o, Lignarium, place for wood.
p, Fœnile, place for hay.
Piscinæ duæ, two fish-ponds.
r, Cellæ cervorum, place for deer.

Scotch Pine. — Sir, Having examined several curious notices in your *Gardener's Magazine*, upon the very important question of whether the Scotch Fir [Pine], at present so universally planted, is of the best sort of that kind, such as grows in Norway and the aboriginal forests of Scotland, or whether it is an inferior sort more recently imported from Canada, I take the liberty of sending you an extract from a very valuable and curious book printed in Edinburgh, 4to, in 1778, and written by William Boucher, nurseryman at Comely Garden, Edinburgh, called a "Treatise on Forest Trees, with plain directions for removing the most valuable kinds to the height of thirty feet and upwards with certain success." (The latter part of the title called my attention to it as it lay on a bookstall, and I strongly recommend it to every forest planter who can lay hold of it.) The passage (p. 137.) is as follows: — "It has been an old dispute which still subsists, whether there are more sorts than one of the Scots pine or fir; and it is commonly asserted that the difference we find in the wood when cut down and polished, is owing only to the age of the tree or the quality of the soil where it grew. But this assertion, I believe, is not just, and proceeds from want of proper observation, as I have seen many fir trees cut down of equal age in the same spot, where some were white and spongy others red and hard, from which to me it appears evident that there are two distinct species of them, and indeed the difference of colour may easily be discovered by any one who walks through a newly pruned plantation even of young trees." I consider this passage as very curious, and well worthy the attention of the Highland Society. Perhaps you might be able to obtain some refutation or confirmation of these facts and opinions from some of the agents of great forest-owners in Scotland. If it should turn out to be true, perhaps some nurseryman in the neighbourhood of the forests might undertake to collect the seed from the red variety, and send the plants down to us in the south. I am quite sure that no planter would hesitate to give a large additional price for his trees, if it were made known through your Magazine where he might apply for them with certainty of having them true. I should think, too, that a large quantity of the cones might be easily disposed of in London: for my part, I should readily take a good many. I observe that the Highland Society has offered a premium for raising seedlings of the Scotch pine (*Pinus sylvestris*) from seeds imported from Norway, or from the natural-grown pine in the Highland districts of Aberdeen, Moray, and Inverness; and a similar premium was offered some time since by the Society of Arts, for trees raised from seed imported from Christiana. I should think that it might be worth the while of some merchant connected with Norway to import a few cones, at all events, if it were not much of a mercantile speculation in extent, I will undertake to say that it would pay its own expenses, and be of essential benefit to the country in respect to one of its most important and universal improvements; it being, in fact, the question, whether a really good and valuable timber shall be planted all over the land instead of a very bad or useless sort. — *W. N.* July 1. 1829.

Pinaster (*Pinus Pinaster*). — Being on these subjects, I would beg to ask any of your correspondents if they are acquainted with the nature and qualities of the timber of the Pinaster. During a recent ride to Weyhill, I saw several very fine trees which had been cut at Oatlands, lying by the river side, affording capital opportunity for observation and experiment on its strength and value. — *Id.*

The Deciduous Cypress and Cork Tree. — I observed near Esher, in the front of a new stone building by Mr. Malcolm, a few very fine plants which had originally stood in a nursery ground, among the rest a fine deciduous cypress, say 40 feet high, and a very fine cork tree. Do either of these trees ripen their seeds in this country? Would not the cork tree thrive in the West Indies? and how could a quantity of its acorns be procured and safely sent out? — *Id.*

The Antarctic Beech [*Eucalyptus* sp. ?] — Capt. Forster, who sailed in His Majesty's ship *Chanticleer* on a scientific voyage to the south, tells us that Station Island, on the east coast of Terra del Fuego, is covered with woods to the very summit of the hills; and that the principal tree is the *Antarctic Beech*, an evergreen, clothing the country with perpetual verdure. What an acquisition would this evergreen be to us! Try to introduce it. — *Z.* December, 1829.

Would the Water Lily of the Ganges, with a blue flower, succeed if planted in the hot water at Bath? I think it would, and would be worth trying; perhaps in time we might naturalise [acclimatise] it in those springs of cold water which never freeze. I should like also to try gold fish in the hot water, they are said to breed prodigiously in it. — *Id.*

The Culture of the Bamboo in England. — A correspondent having enquired in Vol. IV. p. 535., whether it may not be practicable to introduce the culture of the bamboo into this country, I think it will not be an unwelcome thing to you and your readers, if I point out what appears to me to be a reasonable probability of introducing with success at least one species of this most valuable and useful vegetable. Since the genus, as well as all the species, is little

known in this country, some of your readers may be gratified by a translation of the generic as well as specific characters, from the description given by Humboldt in his rare and expensive work, *Plantes Equinoctiales*, which can be accessible only to very few of your readers. *Pl. Equinoct.*, No. 20. p. 68.

Bambusa, Bamboo. Hexánd. Monog. *Linn.* ; Nat. Ord. Gramíneæ, *Juss.*

Reformed generic character. The common husk of two to five valves, many-flowered ; the valvules distinct, and successively increasing in size ; the spikelets or small shoots (locustæ), sometimes somewhat flattened, two-ranked, few-flowered, sometimes cylindrical, pointed, many-flowered. The partial husk two-valved ; the outer valvule lanceolate, concave, embracing the inner valvule, which has its margins folded together, is three-sided, and is placed round the pistil and stamina. Two innermost little scales are placed in contact with the ovary. Stamina : filaments six, external (exserta), of the fineness of a hair ; anthers incumbent. Pistil : ovary sometimes furnished with a short partial flower-stalk ; style, single, short ; stigmata, two or more, feathery. Seed-vessel, a single seed covered with the interior valvule of the partial calyx. — Habit. Plants perennial, lofty, of the habit of the reed ; the younger branches curved backwards ; pungent ; leaves jointed, deciduous.

Species.*

arundinacea, reed-like ; De Retz. obs. 5. p. 24. *Linn. sp. pl.* 120. *Nástus*, *Juss. Gen. Pl.* p. 34.

agræstia, wild ; Rumph. Amb. 1. 6. cap. 6. tab. 3.

multis, reclaimed ; Rumph. Amb. 1. 6. cap. 6. tab. 3.

múltiplex, manifold ; Rumph. Amb. 1. 6. cap. 1. tab. 1. *verticillata*, or whorled, according Willdenow.

máxima, largest ; Rumph. 1. 6. p. 12.

fáx, torch ; Rumph. Amb. 1. 6. cap. 2.

tabacaria, tobacco ? Rumph. Amb. 1. 6. cap. 3.

Qu. whether this be not a variety of *B. verticillata* or whorled.

To these Humboldt has added two species, natives of South America, which he has figured under the names of *latifolia*, broad-leaved, *Guádua*, *Guadua* ; Humboldt. *Pl. Equinoct.* No. 20. p. 68. which he thus describes : — “ Panicula loose, with few spikelets, of one or two inches in length, somewhat rowed. Leaves narrow, lanceolate. Stalk, tree-like, straight, of six fathoms long and more, knotty, polished, branching from the bottom to the top ; the branches closer at the summit, the space between the knots of the length of a foot, and of six inches in diameter, pipy, surrounded with sheaths which are close set without with stiff hairs, smooth within, and at length fall off. Branches cylindrical, heaped together, the younger ones before they are unfolded piercing at the point, and curved backwards ; but after they are unfolded, upright. Leaves alternate, flat, jointed at the point of the sheath, deciduous. Sheaths long-continuing, hairy at the neck. — Flowers, loosely disposed in subdivided panicles (subpaniculati). The common husk two-valved, many-flowered, the florets disposed on a cylindrical rowed spikelet of one or two inches in length. The partial husk two-valved. Pistil hairy. Ovary placed on a short partial flower stalk. Stigmata, three, violet-coloured. Two small scales, oval, fringed (fimbriato-ciliatæ). Seed oblong.

“ This species inhabits the warm regions of America, where it is called *Guadua* by the natives, whence its specific name.

“ The bamboos of America offer the same advantages as in India. The *Guadua* bamboo is solely employed for the construction of entire houses. The oldest and largest stalks serve to form the walls ; with the smaller ones the inhabitants form the main roof. The upper covering is composed of the young branches of the plant, furnished with leaves as they are, and of which they put many layers one over the other. The doors, the tables, even the beds, are made of bamboos. The advantages which the inhabitants of America find, in making use of this plant, rather than of the very lofty and very hard timber which surrounds them, are, 1. the facility with which they cut them, and transport them to very great distances ; 2. the small degree of labour which is required, since the inhabitants employ the plants entire, or only split lengthways into two parts ; 3. in its durability, which may be compared to that of the best timber ; 4. and lastly, in the circumstance that their houses, all open to the air, and protected from the heat of the rays of the sun by a wide and thick roof, preserve within doors a cool and agreeable temperature in the midst of the strongest heat of the day.

“ It is particularly in the mountain of Quindiu, that the *Guadua* bamboo grows ; it forms forests of many leagues in extent, and appears to delight in elevated situations, which offer it a mild temperature. It descends also into the very hot valleys, but is never seen on the high mountains. We have cut a great number of bamboos, and in all of them we have found clear water of an agreeable taste.”

From other parts of Humboldt's works it appears that this plant has taken its name from the little town of *Guadua*, around which it flourishes in great abundance, and which is not very distant from Santa Fe de Bogota, the capital of New Granada, or Colombia ; that it grows principally in the mountain bogs, in the like elevation as many of the beautiful species of oak which enrich the forests of that country, and at which elevation snowoccasionally falls, though far below the regions of perpetual snow ; it is in the *terra templada*, as it is called, or temperate region. It therefore appears by no means impossible, and even very probable, that this bamboo, which seems to flourish in a lower temperature than any other known bamboo, may succeed in the temperate climates of Guernsey, Jersey, Cornwall, Devonshire, and the back of the Isle of Wight ; and that its culture may possibly be gradually extended to more inland and colder situations. It would at all events add a new and interesting inmate to our green-houses ; I should delight to see it aspiring above Mr. Loddiges' palma, by the side of the *Ceróxylon andicola*, which, I am sure, he will soon obtain. But I by no means despair of seeing the bogs and marshes of our southern counties rendered productive of these gigantic reeds, furnishing to the fishermen longer and lighter stilts and leaping poles ; more magnificent cover for wild fowl ; better poles for punts and barges, and all inland navigation ; better spars for vessels ; lighter, stiffer, and more portable materials for bridges, rafts, hurdles, fences of every description, for supporting stack cloths ; shafts for wheel-carriages, for scaffolding poles, rafters, principals, and side timbers of roofs, flooring joists, beams ; and for every other purpose wherein a light, elastic, stiff, straight, and

* R. Sweet, in his *Hortus Britannicus*, enumerates only two species as known in our hot-houses *Bambusa arundinacea* and *B. verticillata*.

urable material is required ; turning such lands to infinitely better account than can be obtained from any reed bed, willow bed, fishery, decoy, heronry, or other present application of the like lands.

I therefore sincerely hope that among your readers will be found some who have connections with some of the numerous Englishmen, who, for military, commercial, or scientific purposes, have emigrated to Peru and New Grenada, and that they may succeed in obtaining either roots, or seeds, or plants of this valuable vegetable from the country and climate of the potato, the El Achiro, and the Arracacha, which may be a gift to Britain, little less beneficial than the former of these, descending from the Andes, and diffused from Van Dieman's land to Siberia, has already proved, and the other two may prove. It is to be expected that either the ripened seeds or the ligneous fleshy root of the *Guadua* bamboo, with its strong-pointed buds, protected as they must be by their hard flinty case, may, when embedded either in powdered charcoal, or even in earth, or at all events in the powdered chloride of lime, be conveyed from Colombia or New Granada to this country, without losing their vegetative power ; and I sincerely hope that some patriotic cultivator will make the experiment.

It was said about twenty years since, that the Earl of Moira had introduced some species of bamboo into Ireland with success from Hindostan ; can any of your readers give me information upon this subject ? I am, Sir, &c. — *Causidicus*. January 11. 1829.

The Lilac Tree is said, in Phillips's *Sylva Florifera* (vol. ii. p. 49.), to be met with in full perfection in Paris in the months of August and September, a season in which I have not even seen them in flower in this country. Have we not the same means of retarding their flowering as the French, for which some latent cause must be assigned, or is it a different variety from any of the sorts we cultivate ? Perhaps yourself, during some of your Continental tours, might have seen it ; if not, some intelligent correspondent will give some further particulars, for which I should feel obliged ; and remain, Sir, &c. — *J. H. Linden Hill, near Maidenhead, Jan. 18. 1830.*

Strelitzia reginae. — In answer to G. G. (Vol. V. p. 239.), I beg to say I flower this plant very freely under the following treatment :—At the time I place my green-house plants in the open air, I bring plants of *Strelitzia* from the stove, and place them in the green-house. In September the plants are removed to their winter quarters, the *Strelitzia* are taken to a cool part of the stove. I like them to be under-potted ; the mould used is sandy loam and peat ; rich mould I think improper, it makes them produce too many leaves, which some persons cut off to the great injury of the plants. With respect to water, I use it sparingly until they show flower, which is generally about January or February, I then give it more freely. — *W. Boyce. Kingscote Gardens, April, 1829.*

Strelitzia reginae. — Sir, In answer to the query of G. G. (Vol. V. p. 239.), with respect to flowering the *Strelitzia reginae*, I wish to inform him that we flower it in the winter months here, both in pots and also planted out with stove and green-house plants, in made soil in a large house for various kinds of plants, where the temperature in the winter months, with fire heat, is about 55°. The soil is a light red sandy loam. The plant, from its fleshy or soft roots, requires but little water to keep it in a healthy or growing state ; but when coming into flower it may be watered more freely, when it will blow fine for several weeks. The low temperature of the metal-roofed hot-houses in the winter here, and the sudden transition to heat as soon as advantage can be taken of the sun's rays in spring, form, no doubt, one cause of many of our old inhabitants of the stove flowering more frequently than they did formerly in wooden houses. I am, Sir, &c. — *George Fulton. Northwick Park, Jan. 30. 1830.*

Preserving Florists' Flowers. — Sir, Every botanist who has endeavoured to dry plants, must regret the rumpled state of the flowers, owing to the thickness of the stems and leaves preventing the pressure reaching the thin and delicate flowers. To remedy, in some measure, this failure, I would propose cutting off the flowers, slightly pressing them till flat, and gumming them on while fresh. Specimens of flowers thus treated are herewith sent. If done by a person of more ingenuity than the writer, would they not be useful to the florist to preserve prize flowers ; and likewise to the nurseryman to show in winter what flowers his plants will produce ? — *W. L. May, 1827.*

The flowers in the book sent, it is stated, were collected in the spring of 1819 : they are gummed on, but not varnished in any way, and certainly retain their colours remarkably well. They are chiefly polyanthus and auriculas ; but there are also stocks, wallflowers, daisies, narcissuses, and several other genera. — *Cond. July 9. 1827.*

Rose Tree. — I have a small tender-twigg'd rose bush, which bears very delicate flowers, having the exact smell of vanilla. As I have never seen such a rose as my own, nor found such a one described in any horticultural work, I should be glad to be informed, by any gentleman possessing the kind, how it is propagated, every means I have tried having proved abortive. — *Orms. Yorkshire, lat. 54°, Oct. 31. 1829.*

List of acclimated Exotics. — Sir, Permit me, through the medium of your Magazine, to solicit from some one or more of your numerous correspondents, a list or lists of such exotics indigenous to warmer climates than our own, as upon trial have been found to endure our most severe winters without protection. If amateurs, as well as those in the profession of horticulture, would favour you with the names of plants of the above description that have come under their notice, a valuable list might soon be formed for the use of such as may wish to have an enlarged collection of exotics growing in their pleasure-gardens and shrubberies. I am, Sir, &c. — *T. R. Clowance, Cornwall, Jan. 26. 1830.*

Earlier bearing of Fruit Trees now than formerly. — Sir, Can you in any way account for apple and pear trees coming much sooner into bearing in the present day than formerly ? It has struck me, but I cannot say it from experience, that it may arise from grafting on apple and pear stocks, raised from the pips of cultivated sorts, and not on stocks raised from pips of the crab and wild pear. — *H. Gray's Inn, Nov. 12. 1829.*

Fruit Trees on Wired Walls. — Sir, Although it is a very long time since I last addressed you on the subject of your Magazine, yet I have not been altogether inattentive to its object ; for I have relinquished the larger undertaking of a farm for the more pleasing occupation of a garden. In this new profession (if I may use the expression) I have met with the greatest assistance from your Encyclopedias and Magazines ; for I extract from them all, and in return shall endeavour to furnish you with something now and then from my pen, when the fit comes on. Among the various new improvements in training fruit trees on walls, I think the wiring the walls seems to promise considerable facilities, especially when plastered or stuccoed. I recollect the late

Mr. Carr of St. Ann's, near Leeds, recommending strongly the use of eyed cast-iron nails, which were not drawn from the wall, but when it was wanted to remove a branch, the strings or willows were untied, and drawn from the nail. Now the wiring the wall would be attended with similar advantages, although I suspect at greater expense. I would submit for your consideration, whether softened copper wire might not be used safely for tying up the branches to the eyed nails; if so, the disfiguring party-coloured shreds of cloth would be avoided, and thus the nests or lurking holes of insects be done away with. In order to prevent the smallness of wire from injuring the bark of trees, it might be passed two or three times evenly round and through the eye each time, and then, with one or two twists, made fast in front. Dark-coloured walls are by some strongly applauded for training fruit trees, from the greater power of radiating heat, and thus forcing, as it were, earlier to maturity the trees trained on them. The danger and disadvantages seem to be, that they are apt to force into blossom at too early a season in spring, rendering them liable to be injured by frost; and in summer the trees are liable to be overheated or scorched. I look on the first of these objections as the most weighty, as the latter can be removed by leaving a closer foliage, or by a partial or temporary screen during the brightest and hottest hours, or perhaps by partial waterings by means of an engine. I think the forcing at too early a season might be in some measure avoided by a coat of whitewash in March or April, which would most likely be all washed off before the summer was far advanced, but not before the spring frosts were most dangerous; or the trees might be loosed from the walls, as practised successfully at St. Ann's. — *W. M. Argyleshire, Nov. 6. 1828.*

Apples for a small Orchard. — Sir, Observing in your Magazine for February (p. 111.) a query from J. S. L., wishing to know the best varieties of apples for a small orchard, I beg leave to offer a few observations. Your correspondent wishes them to be founded on experience, to which, by the by, I do not claim any great pretensions, though I have been amongst fruit and orchards some small part of my life, which is not very far advanced. My employer, Mr. J. Pearson, of Chilwell, Nottinghamshire, who is, I believe, one of the greatest fruit-growers in this part of the country, if not in England (except cider-growers), is particularly careful in selecting fruits that keep well, and likewise those that succeed each other in their regular stages of keeping; thereby, from the beginning of the season, always having an abundant supply of marketable fruit. If J. S. L. were to have one apple tree of a sort, it would, to plant two acres, require far above the number of real good sorts planted in this part of the kingdom. I shall endeavour to give a short list of those considered here the best for keeping and bearing, as well as for the table and kitchen; and as, in the course of a few years, when the trees get into full bearing, your correspondent would find, to keep the different sorts separate, it would require much more trouble and room than a small well selected variety would; an orchard of that description would not suit a person who made supplying the country with fruit part of his business, and would not yield so much profit, which is a very great point, and which we all aim at, more or less. I shall only mention sorts that I have actually seen bear as standard orchard trees in this county.

TABLE APPLES.

- The Burgin Apple.* A conical yellowish fruit, middle-sized, fine flavour, middling bearer.
- Lord Lennox.* A fine scarlet new variety, rather flat, with very superior flavour, a strong upright grower, well adapted for situations where the trees are not required to spread much.
- Clifton (Nottinghamshire) Nonesuch.* A very handsome apple, good flavour.
- Keddlestone Pippin.* A Derbyshire apple, originated (I believe) at the village from which it derives its name; a great bearer, middle size, and very superior flavour.
- Wollaton Pippin.* A very handsome flat apple, supposed to be of French origin; one of the best keeping table apples we have, good flavour, very juicy.
- Blenheim Orange, or Woodstock Pearmain.* A very large handsome apple, fine flavour, but considered rather an idle bearer.
- Pike's Pearmain.* A beautiful fruit, great bearer, and very good flavour; well adapted for market.
- Waterloo Pippin.* A middle-sized early scarlet fruit, good.
- Garret's New Golden Pippin.* A great bearer and fine flavour.
- Hertford's Russet.* A great bearer, middle size, and keeps remarkably well.
- Egglesstone Summering.* A handsome early fruit, good bearer.
- Bess Poole.* One of the best apples we have for baking, table, size, and colour; a very great bearer after the trees get a certain age, and keeps very well. If I recollect right, some years ago you called at the time we were getting the crop, you may, perhaps, be able to speak to the fineness and beauty of the fruit.

KITCHEN APPLES.

- Maltster Apple.* A very fine large fruit, comes in just before the late keeping sorts; good bearer, and free grower.
- Mank's Codlin.* A great bearer and bushy grower, suitable for growing in small gardens, and from the very scarlet appearance of the outside of the petals, and free blooming, would make a very handsome feature in a shrubbery, with the single almond, and other early-flowering shrubs.
- Keswick Codlin, or Westmoreland Pippin.* Early and a great bearer, rather getting out of favour in consequence of not keeping well, and sinking a great deal when baked.
- Hawthornden, or White, Apple.* A fine handsome early fruit, good bearer.
- Northern Greening.* A rather conical greenish apple, great bearer, good keeper, and capital for baking; much cultivated.
- Normanton Wonder.* A very superior apple, free growing, very large and yellow, and one of the best keeping sorts; a variety much planted.
- Greenup's Pippin.* A handsome large apple, with rather a long stalk, which makes it unfit for exposed situations; good bearer.
- Beautiful Stripe.* A Lancashire apple, a very great bearer; and from the fine colour of the fruit, and being a compact grower, the trees present a complete surface of scarlet when in full bearing.
- The Hunthouse.* A middle-sized apple, great bearer and long keeper; sometimes used for the table.
- Woodborough Pippin.* A large handsome apple, and an immense bearer, very good for baking, but when used in its raw state has an unpleasant bitterish taste; keeps very long.
- The Caldwell, or Padley's Pippin,* is a sort much grown here, and is an excellent apple for profit, it bears abundantly, good size and colour, bakes and keeps well.
- Barton Free-bearer,* as its name intimates, produces abundantly, good size.
- Wareham's Russet.* A very fine fruit, keeps well, and excellent for kitchen use.

I have now mentioned those sorts that I should consider best adapted for profit, and should plant six or seven of each in preference to a greater variety.

PEARS.

In giving a list of pears for making orchard trees, as they are not grown here to a very great extent, I shall limit myself to a few sorts that both grow and bear well in this county. I dare say all of them may be known to your correspondent; but, nevertheless, a list may not be unacceptable.

The Crawford. Early yellowish green pear, good bearer.

Green Chisel. Great bearer, rich, melting, much liked here as an early fruit.

The Huntingdon. A great bearer, well adapted for a market fruit, but apt to turn mealy.

Welbeck Bergamot. A very fine fruit, superior flavour, good bearer, and keeps well.

Swan's Egg. An old pear, bears abundantly, and keeps well; melting, and good flavour when kept late, but in some situations is apt to die at the top.

Aston Town Pear. The most abundant bearer of any, and of very good flavour.

I have now, as far as lies in my power, answered J. S. L.'s queries; but he must bear in mind, I only state what are chiefly cultivated in Nottinghamshire, and I trust it will meet his views. Yours, &c. — T. Wood. *Chilwell Nurseries, March 23. 1829.*

Select List of Apples and Pears. — In answer to Mr. R. Errington (p. 111.), I should recommend for early dessert the Egglestone Summering, Waterloo Pippin, and Perfect's Juneating; for middle season, the Burgin, Lord Lennox, Pike's Pearmain, and Blenheim Orange; for late keeping, Wollaton Pippin, Bess Poole, Keddlstone Pippin, and Hertfort's Russet. For kitchen use: Early, the Mank's Codlin, American Summering, and Hawthornden; for middle season, Greenup's Pippin, Maltster, and Barton Free-bearer; for long keeping, Caldwell, Normanton Wonder, and Northern Greening. All of the above will do well as dwarfs on Paradise stocks. — *Id.*

The Bess Poole Apple, and the Advantage of raising Seedlings. — The Bess Poole is much used in this district. There has been much controversy about the origin of its name, some calling it Best Poole, others Bell Poole or Powe; whereas, in fact, it took its name from one Elizabeth Poole, in whose garden it was raised; and I lately conversed with a brother clergyman on the subject, who was personally acquainted with the said Elizabeth. Query, May there not possibly be more than one apple confounded under the same name? We have also a local apple in these parts called the Low bough, with small fruit, but an immense bearer, and keeps till summer, when it is by no means to be despised for dessert. I have raised a great many apples from seed, which have now come into bearing; none first rate for dessert, but many valuable for baking. We lie near the rock here, and apples in general do not succeed very well; but these seedlings, reared on the ground, succeed better; and the consequence is, that, whereas formerly we had scarcely enough for the use of the house, we have now abundance, unless it be in a very bad year. — W. T. Bree. *Allesley Rectory, near Coventry, Jan. 16. 1830.*

Vines for a Geranium-house. — Sir, Your correspondent who styles himself "A Constant Reader," (Vol. V. p. 733.) requests some advice in the choice of vines for his geranium-house. I will endeavour to give it him, and shall, at the same time, throw out a few hints on the cultivation of them, which may be acceptable to those of your readers who are not exactly practical cultivators. Your correspondent must not think of planting late vines for that purpose, as one of his chief difficulties will be (if the geraniums are of paramount consideration) to get the wood of the vines well ripened before the geraniums are housed for the winter; and if he can manage to get the geraniums all turned out of the house by the end of April, he may probably shine in the grape way; if not, it will be complete hodge-podge, and, as usually happens, neither vines nor geraniums will be worth looking at. Now, supposing the geraniums out, and the period in question the beginning of May, my advice is, keep up a day heat of from 65° to 80°, and a night heat of 55° to 65°; the chief object in this case being to get the grapes well flavoured, and the wood well ripened for the ensuing year. Again, in the autumn, unless there has been a long and warm summer, the fires should be at work towards the end of August, and if the heat can be kept from 75° to 85°, night and day, so much the better, as night heat, in this part of the process, cannot do any harm. The leaves of the vines, when the geraniums are housed for the winter, should be quite yellow, and if they are dropping so much the better. The six vines for this house I should choose as follows:—Two Black Hamburg, two White Muscadine, one White Frontignac, and one White Sweetwater, observing to put the Frontignac at the warmest end of the house. With regard to their general cultivation, I shall contend that although the spirit of the age, shaped by the progress of scientific research, has sufficiently, in theory, exploded the notions formerly held of making deep borders, thinning the leaves to admit light, and other erroneous works of supererogation; yet in practice they are still followed, more or less, by one half the horticultural world. One of the most valuable papers that has appeared in your Magazine is, in my opinion, one by Mr. Robert Hiver (Vol. V. p. 60.) (whom, by the by, I know not); and had I a score vine borders to make, I would not make one of them more than 1 ft. 9 in. deep in soil, but would depend considerably on top dressings for their after support: for, in my opinion, the quantity of heat required, whether natural or artificial, to flavour the fruit, and properly mature the buds for the next season, is in direct proportion to the average depth of the roots; therefore, if this hypothesis be right, those who deepen their borders 3 and 4 ft. are only creating extra-expense in fuel hereafter to ripen the wood or fruit. Here I must observe that by ripening the wood I do not mean simply turning its colour, but enabling the vine to cast its leaves spontaneously through the medium of heat alone and a dry atmosphere; a process which many a one gets the frost to do instead (a sad mistake). I need say nothing about the formation of the borders, the systematic draining, or the air pipes of Mr. Forrest (an excellent plan), as those things, I presume, cannot be better done than at Syon, as described in Vol. V. p. 502. of this Magazine. All I shall now say is, that I think it would be highly desirable to get a perfect command over the surface of the vine border (of such, of course, as are planted outside) with regard to wet, and this may be accomplished by having a tarpawling made to roll and unroll occasionally; and I am sure that in seasons anywise wet and cold it would be found extremely advantageous. I would have tarpawling rolled on the border in all heavy rains from the middle of July until the fruit and wood were ripe; and towards October I would remove it altogether, and give the border a heavy top dressing of rich manure, and this should again be removed to any of the garden ground in March, to give place to as much more of fresh manure. This latter dressing, I think, should not remain on after the middle of July, but be removed altogether, and the border raked smooth, as the deeper the sun's heat penetrates the border at this season the better. It is a common practice to keep applying top dressing in large quantities, without taking any off, by which means the depth

of the border will, in a few years, increase considerably. I must remark, lastly, that vines are often ill used by over-bearing; those who want large and fine-flavoured grapes must not spare either knife or scissors. If I am in error in any of these points, I trust I shall call forth correction from some master hand, and which, if honest, I shall be thankful for. I remain, Sir, &c. — *Robert Errington. Oulton Park.*

Vines for a Green-house. — In answer to a Constant Reader (Vol. V. p. 733.), who wishes to know what vines are proper to plant in a green-house, chiefly for geraniums, the health of which is entirely studied. If I must be candid, I should say plant none. Why, it would naturally be asked, should such an extent of glass be unoccupied, since the practice of planting vines is, I may say, universally adopted, nursery houses alone excepted? That vines will grow and bear in a green-house, I readily admit; but that geraniums and other green-house plants generally will do well I flatly deny; either the one or the other must suffer, because the plants want all the air possible in open weather, particularly in the months of April and May, both day and night. They should enjoy all the air possible in May, previously to their being removed into the open air in June, or they become drawn and dwindling. On the contrary, the vines want the house to be more close, as they break generally in the end of April, and produce their bloom in the month of May, when a little fire should be made night and morning, in dull cold weather, which would greatly accelerate the growth of the vines. That light and air is indispensably necessary to the good culture of geraniums, in keeping them what we term *stocky*, every cultivator must agree; and that shade, and keeping the house to a higher temperature than is required, must be highly improper, is also obvious. If your correspondent is desirous of having his geraniums fine, let him plant no vines; but if he must have both geraniums and grapes, let him plant only three instead of six, training them to every other rafter. I know of none better to plant than three of the sorts named by himself, viz. Royal Muscadine, Early White Teneriffe, and the Black Hamburgh. These I would train very thinly over the house; if lofty, they might be trained to wire, in the manner described by J. Haycroft (Vol. V. p. 733.) I am, Sir, &c. — *J. H. Linden Hill, near Maidenhead, Jan. 18. 1830.*

Vines for a Green-house. — I observe that one of your correspondents (Vol. V. p. 733.) wishes to know whether the six kinds of vines he mentions will succeed in a green-house. I think only two of the six will succeed, viz. the Royal Muscadine, and Black Hamburgh: the others, although all of them good kinds, require a strong heat; indeed without it they will not ripen their fruit well, and are only fit for a pine stove. The kinds I would recommend as most suitable for a green-house, in addition to the above-named two, are the White and Black Muscadine, and Black Cluster (not the Miller Grape); and although I have not tried the Verdelho variety in a green-house, I am inclined to think it will do very well, as it forces well in pots in a stove, and, although a small variety, is, upon the whole, a good grape. — *G. Fulton. Northwick Park, Jan. 30. 1830.*

Muscadine and Muscat Grapes. — In reply to different queries respecting the identity of the Chasselas and Muscadine grapes, an experienced nurseryman, who has been a good deal in France, has furnished us with the following list of names and synonyms: —

Chasselas blanc, Bar sur Aube blanc, Chasselas d'Or. These are different names of our *White Muscadine*. Bunches closely set and middle size; clear white, or amber colour; flavour, delicate and sugary; early and great bearer; certainly one of the best white grapes we have.

Chasselas de Fontainebleau. Our *Royal Muscadine*. Distinguished from the former, by its stronger wood, larger leaves, longer bunches, thinner set and more fleshy: an improved variety of the former.

Chasselas Musqué. The La Cour of Miller, the *True Muscadine*. The bunches of this species are not quite so large as those of the White Muscadine, are of a greener tint, and ripen later; the leaves are smaller, and not so deeply lobed; a good bearer, and excellent grape, combining the hardiness and fertility of the Chasselas, with the high musky flavour of the Frontignac. In these respects, it is the only one of the family to which the name of Muscadine is strictly appropriate.

Petit Chasselas. Our *Parsley-leaved Grape*.

Chasselas Violet. Our Black Muscadine, or *Frankenthal*.

Chasselas Noir. *Black Muscadine*, with a thick set bunch.

Chasselas Rouge. *Red Chasselas*.

Chasselas Rose. The last five sorts, though good grapes, are not equal to the former, and ripen somewhat later.

The *White Sweet-waters* are also Chasselas grapes, if we regard their affinities in size, shape, and flavour, their period of ripening, the family character of ruddiness in the young leaves and extremities of the shoots, and the absence of pubescence thereon.

The *Muscat*, or *Frontignac* grapes, form another class, which, though not generally ripening on the open walls, is not so valuable as the former for ordinary use; yet, from the superiority of flavour, they are indispensable wherever artificial heat can be applied. The French enumerate in their catalogues, the Muscat Blanc, our *White Frontignac*, a close long conical bunch, exceeded by none in richness, and high musky flavour.

Muscat Rouge. *Red Frontignac*. Of a light purplish red to the sun, looser in the bunch than the white, and akin to it in flavour.

Muscat Gris. Our *Grizzled Frontignac*. Of a striped brick colour; the bunch not so large or close, but a better bearer, and earlier than the foregoing, and equally high flavoured.

Muscat. Our *Black Frontignac*. Black Constantia, or Muscat of Jerusalem. A long black bunch, high-flavoured, but a thin bearer.

Muscat Noir. Our *Blue Frontignac*. Bunch short, very closely set; ripens unequally, but earlier and a better bearer than the former: leaves slightly lobed.

Gros noir Musqué. A large black-shouldered bunch, but delicate, and sets badly; leaves deeply lobed.

Muscat noir de Jura. A black Frontignac, from Mount Jura: bunch middle-sized; high flavour; good bearer, and ripens early.

Muscat d'Alexandrie, or Passe longue Musquée. Our *White Muscat of Alexandria*. — *J. R. Kilkenny, April 19. 1828.*

Best Sorts of Pine-apples for Cultivation. — Sir, C. F. W. wishes I had answered his query respecting the pine more fully. My answer is in Vol. IV. p. 186., and, though brief, is, I think, fully to the point. C. F. W. says the Enville, Globe, Otahcite, &c., are in high repute in his neighbourhood, and that these sorts are not mentioned in your *Encyclopædia*, or your *Treatise on the Pine*, by an F. H. S. With regard to the Enville, it is as generally known as any pine in cultivation, and was long since raised in C. F. W.'s neighbourhood; the Globe is grown in some

collections, but not plentifully; the Otaheite has not long been known in this country, not is it of much consequence if it had never been known at all. I tasted one lately at a meeting of the Horticultural Society, and, though a handsome fruit, the flavour was little better than that of an early Dutch turnip. This fact was observed by several persons then in the room, though I have no doubt that the flavour was much deteriorated by its culture, as the Secretary remarked that it had been ripened in a very low temperature, and that it was found to be much heightened in flavour when subjected to the above low temperature. Plenty of air and heat is necessary to the high-flavouring of most kinds of exotic fruits. C. W. F. says, suppose J. H. confined to four sorts, which would they be? I answer, Black Jamaica, Black Antigua, New Providence, and Enville; or, if confined to one sort, C. F. W. asks, would I prefer the Jamaica to the Queen? I answer, I should prefer the Jamaica, which is a very high-flavoured fruit, good at all seasons, fruiting freely, very juicy, and remarkably heavy for its size. If well grown, it generally attains to from 3 to 4 lbs. weight. If C. F. W. had wished five sorts, I should have included the Queen, the acid flavour of which is much admired; besides, it is by far the best to be placed in the hands of a novice, being a very free grower, early fruiter, and of more easy culture than any other variety. But this and all other kinds of pines should be grown separately; the Queen to come in first, then the Enville and Providence, and then the Antigua and Jamaica. These sorts will supply the table till Christmas. But let me not be understood to say the Antigua and Jamaica should be ripened in autumn, as the best season is from the 1st of July to the 1st of October; but they are better winter pines than any other. The Queen seen by C. F. W., with a small crown, may have been the Ripley; but the size of the crown is a poor criterion to judge by, as all kinds of pines will bear crowns of various sizes. I cut an Enville pine, in 1826, which weighed 7½ lbs., 16 oz. to the pound, with a remarkably small crown. In the same pit were others weighing not more than 1½ lb., with crowns extremely large. The Ripley has generally a small crown, with the spines on its leaves bent inwards, and is the improved variety of the Queen, and the best kind of pine for a beginner to cultivate. I wish C. F. W. to know that I am aware there are some very eminent pine-growers in his county, from whom he may obtain much better information than I am able to give on the culture of the pine-apple; and although this fruit is now very generally grown, the best method of its culture is as generally very little understood; indeed it is astonishing to see the difference in the appearance of pines in visiting gardens in a district of a few miles. Wishing C. F. W. success in all his horticultural pursuits, I beg to say that I shall be always most ready to answer every question he may ask on the culture of fruits, flowers, and vegetables. Yours, &c. — *James Hourman. Sept. 1828.*

The Culture of Ginger, with the best receipt for preserving it, and the season of the year when it is fit for that purpose, is much desired by — *C. M. Dec. 5. 1829.*

We shall be glad to hear from Mr. Duff, or some other correspondent, on this subject. — *Cond.*

Failure of Early Charlton Peas. — Sir, I am not certain whether what I am about to propose is a very foolish question, or whether it is a question for the learned; but of this I am certain, that it is rather a serious matter with me; and I therefore beg that you will be so indulgent as to allow it to occupy a spare place in the next Number of your Magazine, whereby I doubt not we shall ascertain its true weight.

On the 13th of last January I sowed some Early Charlton Peas, on a tolerably rich, dry, well-tempered soil; on the 6th of February I sowed some more of the same sort adjoining the first, and other sorts adjoining these; shortly after I began to think the first-sown ones long in coming up, examined them, and found them rotten in the ground. I then examined the second-sown Charltons, and found them in the same state. The other sorts were coming as well as ever peas did, and ultimately brought an excellent crop. Now, the question is (seeing that the Charltons had equal advantages with the other sorts), what is the most probable inference to be drawn from the failure of the Charltons? that it was an improper sort to be sown at that season? or that the seed was bad? I think I may as well tell you, that I found it necessary to mention the failure of the Charltons to my master, and the most probable cause (as I thought), that they were old seed. My master happening soon after to meet with the seedsman, mentioned the affair to him, and he pronounced me "*the most ignorant man in the world,*" for supposing that they were old seed. He stated the failure to be caused by "*the sudden changes they were subject to feel at that season,*" heat and cold, drought and wet, &c. &c. I was very much surprised to learn that my master credited this statement; and, of course, he doubted mine. He, being an upright man, detests an imposition, and doubtless thought himself imposed on by me, in one shape or other; he mentioned to me the seedsman's reply, which caused some unpleasantness between us. I disputed the truth of the seedsman's philosophy, and shall continue to do so, until I see it either supported by facts, or demonstrated by philosophical truths. I trust that your readers will either correct or confirm my opinion, for I am always glad to learn, and beg that you will favour me with your opinion on the matter, in some spare corner of your next Number, which will greatly oblige, Sir, yours, &c. — *Pisum. Nov. 10. 1829.*

Comparative Advantages of Smoke and Hot water in heating Hot-houses. — Sir, I have for some time employed myself, preparatory to building a range of forcing-houses, in enquiring as to the comparative advantages of the old smoke flues, and the recently introduced system of hot-water pipes. The opinions of the most experienced horticulturists are so equally divided and opposed regarding these two methods of generating heat, that I feel quite perplexed which to adopt; and therefore take the liberty of addressing this letter to you, in hopes that, through the medium of your Gardener's Magazine, you will be kind enough to communicate either your own sentiments on this subject, or to request some of your numerous contributors to favour the public and myself with a comparison of the advantages and disadvantages of both systems. I ought, perhaps, to mention the opinion given to me by one experienced gardener, who has been for some time working houses on both constructions, that hot water causes a decidedly more luxuriant growth of wood and larger fruit, but that the flavour is always inferior to what is grown in houses on the old principle. He believes the pipes are perfectly air-tight, but has never used a hydrometer, and on that account the accuracy of the comparison may perhaps be questionable. You will also, I think, be conferring a benefit on the public, by a paper respecting the application of hot water to the growth of melons, cucumbers, early potatoes, &c., in pits, accompanied by a plan. In districts where coals are plentiful, the annual expense (independently of the first cost) would probably be considerably less than the use of fermenting horse-litter, and tend much to prevent the disagreements between the gardener and farmer, which in all establishment too frequently occur. I am, Sir, &c. — *R. H. R. Feb. 24. 1830.*

The result of what we see and hear is, that the mode of heating by hot water, whether in stoves, forcing-houses, green-houses, or hot-walls, is decidedly preferable to steam or smoke flues, or any other mode hitherto in use. For hot-beds we do not say that hot-water is superior to dung, but we think it at all events equal to that material. — *Cond.*

ART. V. *Horticultural Society and Garden.*

DEC. 15. 1829. — *Read.* On the cultivation of the Pine-apple; by Mr. William Jarrett. On raising Apple Trees from Pips; by the Rev. James Venables, C.M.H.S.

Exhibited. *Stachys palustris*, forced, from Mr. Green, 23. Alpha Road; good specimens of the manner in which this plant may be forced, and very similar to asparagus in appearance (see Vol. V. p. 546.). Black Jamaica Pine-apple, from Mr. William Jarrett. This was a remarkably good specimen, in illustration of a paper read this day. Seedling Apple, from the Rev. Jas. Venables, C.M.H.S.; a handsome good variety, illustrative of Mr. Venables's paper read this day. Yorkshire Greening Apple, from — Adams, Esq., of Enfield. Three sorts of Apples, from the Rev. Frederick Beadon, F.H.S.

From the Garden of the Society. Forty-one sorts of Apples, fourteen sorts of Pears, Fruit of *Passiflora malifórmis*, Montserrat Pine-apple, Enville Pine-apple, four sorts of Cardoons, nine sorts of Celery, and fourteen sorts of Chrysanthemums.

Jan. 5. 1830. — *Read.* On the cultivation of Mushrooms; by Mr. Joseph Parker. On the cultivation of the Chrysanthemum; by Mr. R. L. Howes.

Exhibited. Madras Citrons, from the Earl of Aylesford, F.H.S.; noble specimens, in the greatest perfection. Oranges and Lemons, from William Wynne, Esq. F.H.S., the produce of Mr. Wynne's garden at Camberwell. A Melon from Cephalonia, from — Green, Esq. This melon was exhibited at the Meeting on the 1st of December last: upon being tasted this day, it was found to have a green flesh, and to be of no good quality, as winter melons usually are. Seven sorts of Grapes, from Mr. John Haythorn, C.M.H.S. The specimens were well preserved, and good of their kinds. Torreneuvaise Pears, from Captain Le Couteur, C.M.H.S. The Bezy de Caissois, and the Hessel or Nutmeg, are all synonymes of this very useful and good variety of pear, which is usually in perfection in March. Six sorts of Apples from Mr. Hugh Ronalds, F.H.S. Seedling Apples from Nonpareil Pips, from Captain Le Couteur, C.M.H.S. It proved an excellent variety; and, upon tasting, was found to possess so much of the Golden Pippin flavour, as well as of that of the Nonpareil, that it was difficult to decide to which it bore the greatest resemblance.

From the Garden of the Society. Forty-six sorts of Apples, fourteen sorts of Pears, nine sorts of Beet-root, and Oxenoble Potatoes forced in boxes.

Jan. 19. — Mr. R. Gordon of Leweston House, near Sherborne, M. P. for Cricklade, asked Mr. Sabine whether the facts stated in a letter in the *Times* of Jan. 15. (a copy of which, with some variations by its author, appeared in our last Number, p. 114.) were correct; to which the latter gentleman replied that they were, except as to minor points. After some discussion, the following notice, having been signed by six or more Fellows, in compliance with the by-laws, was read from the chair: — "To the Chairman presiding at the Meeting of Jan. 19. 1830. We, the undersigned Members of the Horticultural Society of London, beg to give notice, that a proposition will be made for the appointment of a Committee to enquire into the General Expenditure and Management of the Society at the next General Meeting. (Signed) R. Gordon, Thornhugh Gurdon, Charles Edw. Pigou, Henry Rycroft, Lewis Hayes Petit, G. A. Thursby, Charles Webb, William Bromley."

It was resolved that, in this particular case, the by-laws requiring all notices to be suspended at the next Meeting, and discussed at the Meeting next following, should be dispensed with; and that the subject should be brought forward immediately after reading the minutes at the Meeting on the 2d of February.

Exhibited. Lambert's large Nut of the years 1828 and 1829, from Aylmer

Bourke Lambert, Esq. F.H.S. The former of these had been so well preserved, that they were not distinguishable from the fresh ones.

From the Garden of the Society. Thirty-eight sorts of Apples, nine sorts of Pears, Asparagus forced in the open ground, seedling Rhubarb, large-rooted Succory, Italian Succory, and Chicorée sauvage panachée.

Feb. 2. — After a motion of Mr. Gordon, in pursuance of his notice on the affairs of the Horticultural Society, the following letter from the president, Mr. Knight, was read: — “Gentlemen, I address the following letter to you, respecting the reported embarrassed state of the funds of this Society with exceedingly painful feelings: but I am very anxious to state to its members the circumstances under which I remained unacquainted, till within a few days of the present time, with the existence of such embarrassments.

“When the honour of being made president of this Society was first proposed to me (I had never previously, for a moment, entertained a thought of aspiring to the office), I stated in answer, that, if I became president, the distance of my residence, and the nature of my pursuits, must preclude the possibility of my being present in London to attend to the local management of the affairs of the Society; and I only assented to be nominated on the condition that no other person was proposed; and, subsequently, when the wealth and number of the members of the Society had greatly increased, I addressed a similar declaration from the chair, and expressed my willingness to resign my office. I had then reasons, which were very flattering to me, to believe that the Society did not wish me to resign my office; and I retained it, requesting, however, that the members of the Society would not, through ‘any tenderness of feeling towards me, retain me in office a single hour to the injury of the Society.’ I therefore trust that the local management of the official business of the Society was not amongst the duties which the members who did me the honour to elect me expected me to perform.

“In thus exculpating myself, I do not mean to shift or cast any blame upon the other officers of the Society. They were misled by apparently well founded expectations of assistance, which subsequently proved fallacious, to take too large a garden, with too great a consequent establishment, and from that source all our subsequent difficulties appear to me to have sprung. I trust, however, that our present embarrassments will be, without much difficulty, overcome; and I beg to say, that, individually, I shall be happy to contribute my assistance in any way which may aid in restoring to prosperity an Institution which has already done much, and is calculated to do much more, public service. I beg to add, that I would have attended this Meeting, if I could have made myself in any degree useful. I remain, Gentlemen, &c. &c. — (Signed) *Thos. And. Knight. Downton, Jan. 27. 1830.*”

A Committee of Enquiry of thirteen was then appointed, viz.: — The Earl of Sefton, Sir J. Paul, Mr. R. Colborne, Mr. W. Harrison, Mr. W. Blake, Mr. W. Bromley, Mr. G. Silvertop, Mr. J. Pontifex, Mr. W. Murray, Mr. Orde, Mr. Gordon, Mr. Ellice, and Sir John Sebright.

A good deal of discussion took place at this Meeting, in which, as it may be supposed, Mr. Sabine was rather roughly handled, and accused of having wilfully concealed the real state of the Society’s affairs. Mr. Sabine observed, that the appointment of the committee gave great satisfaction to him, and, he was sure, to every other officer of the Society. He had held his present situation of honorary secretary to the Society for 14 years, and he had attended to it, even to the neglect of his own private affairs. He had never got, nor had ever sought, any remuneration for his services, but the consciousness that he was doing good in promoting the objects of so useful an Institution. For the last four years, the business of the Society had become extremely onerous, and he would have resigned his situation but for the persuasion of some of his friends. In the course of his services in the Society he might have committed errors, but he hoped that the members of

the Society would give him credit for their not being intentional; and he had the consciousness, and it gave him great pleasure to reflect on it, that much good had been done by the Horticultural Society through his instrumentality. If any persons were offended at any part of his conduct, he was extremely sorry for it; and he could assure them, and every member of the Society, that, whatever he had done, he never meant any thing unkindly. (Hear, hear.) He most cordially gave his support to the motion, and would promote the objects of the committee to be appointed by every means in his power.

Exhibited. Raphia Palm and Vaquois Plant, from Rear-Admiral Gage, F.H.S. Forty sorts of Apples, from Mr. Joseph Kirke, F.H.S. Fifty-two sorts of Apples, twelve sorts of Pears, Oxenoble Potatoes forced in pots, Bucks Rhubarb, Elford Rhubarb, *Rhèum undulatum*, and Large-rooted Succory.

Feb. 16.—Mr. Gordon made the following Report from the Committee of Enquiry:—“The Committee appointed at the last General Meeting beg leave to report that they are diligently proceeding in their investigation, and intend to lay before the Society a full statement of its affairs with as little delay as possible. The Committee consider it as an imperative duty, to report that considerable embarrassment has arisen to the Society from the arrears of subscriptions not having been paid up; and that, according to the statements laid before them, such arrears, on the 1st of January last, together with money due for *Transactions* sold, exceeded the sum of 6000l. *, of which but a small portion has since been collected. They therefore strongly recommend that every Fellow should be called upon to lose no time in paying up his subscription.”

Exhibited, from the Garden of the Society. Forty-two sorts of Apples, and seventeen sorts of Pears.

March 2.—*Exhibited.* Five sorts of Apples, from George Tollet, Esq. Oranges and Lemons, from the Rev. J. L. Luscombe, Coombe Royal, Devonshire. A seedling Pear, from George Tollet, Esq., of Betley Hall. Fifty-eight sorts of Apples, and nine sorts of Pears.

The Report of the Committee was read by Mr. Gordon, its Chairman, and the following is its essence:—

Accounts.—The Committee have commenced their enquiries into the finances of the Society from April 30. 1815, it being found impossible to commence a useful investigation at an earlier period. From 1815 to the present time the accounts have been annually audited, and a “State of the Accounts of the Horticultural Society of London” (which did not include the Garden Account), printed and distributed to the Fellows at the Anniversary Meetings. But the Committee observe, with regret, that the practice of stating in such audit-sheets the amount of debts due to and from the Society was discontinued after the 1st of May, 1826. The Accountant of the Society, in his evidence, says that he was specially ordered, in the year 1827, in making up the account, not to add, as he had formerly done, a statement of the debts of the Society. From this omission, the auditors, such of them at least as did not belong to the Council, may have been unable to obtain a just view of the affairs of the Society. Audit-sheets have also been delivered at the Anniversary Meetings, entitled “A Statement of the Accounts of the Garden of the Horticultural Society;” but such audit-sheets never contained any entry of the debts, either on bond or simple contract, due for garden expenses. The Committee consider that these audit-sheets, taken either separately or together, did not give the Fel-

* A considerable number of Fellows are in arrear with their subscriptions, and upwards of twenty have not even paid their admission fees. The list includes one king (George IV.), for his subscription to the garden, 500 guineas; one duke, one marquess, thirteen earls or lords, seventeen honourables or sons of lords, and twelve clergymen. The amount of unpaid admission fees amounts to upwards of 100l., and they are almost entirely due by honourables. In the list of contributors there is not a name of an obscure individual, of a nurseryman, or serving gardener: these were made to pay regularly. — *Contd.*

lows of the Society such information as they had a right to expect. The Committee observe, in the audit-sheet of May, 1826, the following entries :— “ The Society is indebted to various persons about 2800*l.*” “ The Society is indebted on bonds, to Fellows, 550*l.*” By a statement of the simple contract debts of the Society produced before the Committee, it appears that the Society was *then* [viz. in May, 1826] in debt not 2800*l.*, but 3914*l.* 3*s.* 10*d.*, exclusive of garden debts, which, at that period, amounted to 3483*l.* : making the whole of the simple contract debts then due 7397*l.* 3*s.* 10*d.* In addition to the 550*l.* stated to be due on bonds to Fellows (balance of money borrowed for the purchase and fitting up of the house), 11,000*l.* was then due on bonds on the garden account. [Thus, while, by the audit-sheet of May, 1826, the Society appeared to be in debt, in all, 2800*l.* and 550*l.*, equal to 3350*l.*, it was in reality indebted to the enormous amount of 7397*l.* 3*s.* 10*d.* and 11,000*l.*, equal to 18,397*l.* 3*s.* 10*d.*]

The Accountant of the Society considers that, from the way in which the books of the Society were kept, no Fellow of the Society could have been aware of the state of its debts, because no book of debts was kept.

The Committee hesitate not to advise, that no auditor should hereafter be appointed who is a member of the Council or of the Garden Committee ; and that the auditors (appointed annually at a General Meeting) should not merely compare the treasurer’s accounts with the banker’s books and the vouchers, but should examine the bills, enquire into the debts, and remark upon the expenditure of the Society ; and that they should have power to suggest, from time to time, alterations in the form of keeping the accounts or of preparing the audit-sheets, which they might deem best calculated to convey correct information to the Fellows of the Society.

Debts and Assets. — The debts of the Society amount to 14,200*l.* on bond, of which 11,700*l.* were incurred on account of the garden. The simple contract debts amounted to 5507*l.* on the 31st of December last ; and, in consequence of the advertisement directed to be inserted in the public papers, only 47*l.* 2*s.* 8*d.* of debts not previously delivered in have been claimed : in all, 19,754*l.* 2*s.* 8*d.*

The assets of the Society are estimated at 16,500*l.*, exclusive of the subscriptions payable in May next.

Retrenchment. — The Committee are of opinion that a saving of not less than 2120*l.* per annum may be effected.

Estimate of future Income and Expenditure. — The average income of the Society amounted, for the last three years, to 7900*l.* ; but the Committee have thought it more prudent, and with a view to calculation of expenditure, not to estimate the future income of the Society at more than 6000*l.* The Committee consider that all the expenses ought to be, and may be, brought for the future within a sum not exceeding 4000*l.* a year. They hope they may fairly calculate on a surplus income of 2000*l.* per annum at the least, to be applied to the payment of interest and capital of debts.

Management. — The Committee conceive that the embarrassments of the Society have chiefly arisen from the imprudence of the Council in taking a garden on so large a scale, without having secured adequate funds either for its formation or maintenance. The cost of the formation, and expenses of cultivating and maintaining the garden for the eight years from 1822 to 1830 have exceeded the amount of all separate subscriptions for the formation, annual subscriptions, admission fees, produce sold, and incomings of every description for the same period, by the large sum of nearly 29,000*l.*

The Committee believe that the gardener has been too much under control, as he has not the power to appoint, promote, or dismiss his labourers, and, consequently, is deprived of proper influence over them ; nor can he direct works to be done in the garden without a previous report to the Secretary, and a subsequent permission granted by him. They further believe that such and other multiplied and useless reports

have caused much expense and waste of time, without producing adequate advantage.

Some dissatisfaction has arisen from the garden regulations, as to distribution of cuttings, seeds, &c. ; and some allusion has been made to a supposed partiality in the selection of Fellows, to whom such distribution has been made. The Committee, however, although their attention has been directed to this point, have received no satisfactory proof that there is any ground for such an imputation, saving that a preference, according to the rules of the Society, has been given to those Fellows who have contributed to the funds exclusively applied to the formation or maintenance of the garden.

The orchard has been universally acknowledged to deserve great praise, and is admitted to be a most useful and important experiment for the purpose of ascertaining the different sorts of apples and pears, their various synonymes and relative merits, and by affording the means of obtaining grafts of any particular sorts that may be wanted without risk of mistake.

It is incumbent on the Council to take the most efficient means for cultivating the garden in future in the best possible manner, so that it may be a pattern for neatness, regularity, and proper arrangement ; and may afford the best opportunities for instructing young men, of comparing different systems, of trying new improvements, encouraging useful and ornamental productions, and of introducing, preserving, and even acclimatising new flowers, fruits, and plants.

The Committee are of opinion that the cultivation of plants which can only be considered as botanical curiosities, was not one of the original objects of the Society ; they therefore recommend that such plants should be disposed of, and that the future cultivation of them should be discontinued.

The Committee report that, notwithstanding the great number of clerks employed in Regent Street, much of the material business of the Society has fallen greatly into arrear. Neglect has taken place in the correspondence of the Society, in the transmission of medals and diplomas, in registering resignations, and in recording in proper time the minutes of the Council.

The Committee are unwilling to refer to any of the circumstances relating to Mr. Turner's defalcation : but they feel themselves compelled to state that, by evidence taken before them, it appears that, before the transaction took place which caused Mr. Turner's dismissal, a deficiency in his accounts to the amount of 500*l.* had been discovered ; and that, on the amount being repaid by his friends, no notice of the fact was communicated either to the Council, the Auditors, or the General Meeting, and Mr. Turner was continued in the service of the Society.

The Committee trust that hereafter the greatest care will be taken in selecting the papers to be printed in the *Transactions*, and that the more economical plan of publication recommended by them to the Council will be adopted.

The whole cost of *Transactions* appears up to the present time to have amounted to about 25,250*l.*, and the amount received back for copies sold to have exceeded 19,000*l.* ; so that the cost of about 15,000 copies delivered gratuitously in the last ten years has not exceeded 6000*l.*, the particulars of which account are inserted in the Appendix.

Mr. Sabine having signified his intention of retiring from the office of Honorary Secretary, the Council communicated to the Committee their intention of recommending an officer with a salary, who should perform the united duties of Secretary and Assistant Secretary.

The Committee highly approve of a salaried officer performing all the executive duties of the Secretary, and that he should be required at every Meeting of the Council to lay before them a detailed account of the finances

of the Society; and that a form should be adopted for bringing before the Council a statement of all that is due to and from the Society, together with the amount of monies paid and received since the previous Meeting. As, however, it is very desirable that such salaried Secretary should not have a seat in the Council, nor a vote in its deliberations, but should only attend the Council when required, it will be necessary to appoint a new Honorary Secretary, such officer being directed by the charter to have a seat in the Council.

The Committee are further of opinion, that every officer of the Society who is hereafter to be entrusted with the collection or receipt of monies, should find adequate security.

Conclusion. — The Committee having thus prepared their Report under separate heads, take leave to offer a few concluding remarks: —

The Committee disapprove of the manner in which the accounts were prepared, and particularly remark that the amount of debts was never submitted to the auditors; and that no entry can be found in the Council minutes subsequently to the 15th of October, 1824, of the attention of that body having been specially directed to this subject. They notice the inaccurate statement of debts in the audit sheets of 1826 [3350*l.* instead of 18,397*l.* 3*s.* 10*d.*], and the omission of all statements of debt in subsequent years; and they consider that the Fellows could neither obtain an accurate knowledge of the affairs of the Society from the annual accounts passed by the Auditors, nor from the books, if they had been disposed to examine them.

The Committee complain of want of courtesy to the Fellows, of negligent management, of profuse expenditure, and of injudicious engagements contracted without due consideration of the means by which they were to be fulfilled; but while they regret the necessity of stating these opinions, they have the highest gratification in maintaining that there is not the slightest reason for suspecting any of the present officers of fraud or peculation, nor do they conceive that interested motives can by any possibility be attributed to those who without salary or reward have conducted the affairs of the Society.

The Committee report, that notwithstanding they have felt themselves obliged to animadvert upon various instances of mismanagement of the affairs of the Society, yet it is in evidence before them that many objects of the Society have been substantially fulfilled; that the foreign missions for collecting plants, and more especially that of Mr. Douglas, have been eminently beneficial; that the *Transactions* contain a body of valuable information upon various subjects of horticultural interest, and have been published and distributed to the members without exhausting in any material degree the funds of the Society; that on the merits of the orchard, as an important and useful experiment, there is not the smallest doubt. The Committee are sensible that these results could not have been attained without continued exertion and superintendence; and they are satisfied that whatever errors may have been committed have arisen from mistaken judgment, rather than from any want of zeal in promoting the objects and the success of the Horticultural Society.

The Committee indulge the pleasing belief that there still exists the same kind feeling in favour of the Society by which it was first established and for many years so liberally encouraged: relying upon this feeling, the Committee have no reason to doubt but that, under more economical arrangements and a system of management more efficiently controlled and more generally acceptable to the Fellows, the present embarrassments may be surmounted, the debts gradually liquidated, and the approbation of the public deservedly bestowed upon the useful discoveries, the valuable communications, and the beneficial exertions of the Horticultural Society.

(Signed)

R. GORDON, Chairman of the Committee.

On the margin of the Report, references are made to the documents on which it is founded. These documents are chiefly the examinations of Mr. Sabine, Mr. Lindley, Mr. Munro, and other officers or servants of the Society, and of some private gentlemen, nurserymen, and gardeners, including ourselves, as taken by the short-hand writer employed for that purpose. We have glanced over these documents, and made a few extracts. The essence of the whole may be considered as comprised in the two papers first following by Mr. Lindley.

Letter from Mr. Lindley to Mr. Sabine, written soon after the Committee began to hold their meetings, and placed among the documents marked S.

Sir,

Acton Green, Friday evening. Feb. 12. 1830.

It has been impossible for me to misunderstand what occurred in the Council to-day. Upon being called into their presence, I found that an impression had been made upon them, that certain estimates, prepared by the last Council, and sent to the Committee, had been first assented to by me before the Council, and then dissented from by me before the Committee. It is possible that this impression may have ceased with my disavowal of the charge, and that the Council see that no such stigma attaches to me; but this does not satisfy me. I conceive that you, as a gentleman, and professing to be my friend, were bound not to have allowed any such impression to have existed, as you must have known that I was above suspicion upon such a point. You know perfectly well that I have always protested against the statements by which the Council have frequently been deluded into sanctioning measures and expenditure, which, had they known the real state of the Society's affairs, they could not have countenanced; and that I was entirely opposed in opinion to the very heads of estimate objected to by the Committee. You know I have always dissented from any higher value than 2000*l.* being placed upon the library, drawings, and models, which are estimated in the return to the Committee at 3580*l.* You are perfectly aware that I remonstrated against the exaggerated amount of assets in the balance-sheet laid before the Council, and I believe given to Lord Essex so recently as Jan. 22. last; that on account of those exaggerations I did not comply with your request to put a copy of that document into the hands of Mr. Gordon; and that one of my objections to it was the valuing of the *Transactions* at 9691*l.*; the information I had obtained at your request was, that they were only worth 1000*l.*, as I told you over and over again; and, consequently, you must have known that I could not have assented to a statement in which their value is fixed at 2000*l.* You could not be ignorant that I should have objected to 500*l.* being estimated as the value of the fruit-room and sheds; for you yourself, not a month since, told me that, by the lease, no buildings except the glass-houses at the garden, are the property of the Society. All these things being thus, I think I have a right to enquire why you allowed the Council to suppose that I had assented to their estimates. You may perhaps say that you can explain this to my satisfaction; but I have both seen and heard lately too much of explanations to take them against the evidence of my senses. I see clearly that an intrigue is going on for the purpose of making it appear that I am at one time allowing myself to be identified with those miserable proceedings which have brought the Society to its present state, and to which I have been constantly and openly opposed, and at another disavowing those proceedings before the Committee. I have never been a party to the exaggerations of the Society's means, and concealment of the Society's debts, by means of which many honourable and excellent men in the Council have been unfortunately induced to believe a ruined Society to be in a state of prosperity. I have been steadily opposed to the measures by which that ruin has been brought about; and I do not choose, now, at the eleventh hour, either to be cajoled into a suppression of my opinions, or to allow you to make the world believe that I now, for the first time, entertain sentiments adverse to your proceedings. That there may be no farther misconception upon this and other points, I have written you this letter, a copy of which I shall give to all persons whom it is likely to interest.

I am, Sir, &c.

JOHN LINDLEY.

To Joseph Sabine, Esq. &c. &c. &c.

Statement given in by Mr. Lindley, respecting mismanagement in the garden at Chiswick, and in the office in Regent Street, marked S. 2.

The mismanagement of the garden may be reduced to the following heads:—

1. *The Control exercised by the Secretary on the Details of the Gardener's Business.* The gardener has no power to hire or dismiss, to promote or degrade, to punish or reward, his labourers; he can neither determine the duties they have to execute in the garden, while under his direction, nor recommend them to places if their conduct is satisfactory to him. All these things are done by the Secretary; and the consequence is, that the gardener has no control over his men, who know that they hold their places at the will of the Secretary, and that the authority of the gardener is only nominal.

I understand it has been stated to the Committee, that not a tree can be moved, or a border dug, without a written order from the Secretary. This is not literally true, but it is so substantially; the fact is, that the authority absolutely insisted on by the Secretary has been of such a nature that no important work, and very few unimportant ones, can be executed without a written report being first made to him, and his sanction having been obtained; in consequence of this it has frequently happened that many of the most important operations in the garden have been delayed for weeks, or even until it was too late to execute them; as the Committee will learn from any of the under-gardeners, or the garden clerk, if they think proper to examine them.

To these causes, which must be fatal to the wellbeing of any establishment, I think the errors and failures of that of the Society ought to be attributed: to these causes I should refer the unneatness of some parts of the garden, particularly the flower-garden, which I certainly think disgraceful, as I have repeatedly stated in writing to the Secretary years ago; and the instances of bad cultivation, which any experienced gardener could point out, and which have existed to such

an extent, that I have been for a long time ashamed to show the garden to any of my friends. It is obvious, that under such circumstances as those I have pointed out, the gardener can take no personal interest in the welfare of an establishment in which he is a cipher rather than a responsible officer, and that to a cessation of personal interest, apathy and neglect must succeed.

I should, perhaps, here advert to the occupation of portions of the garden by objects of no horticultural interest, to the exclusion of other things; but it would perhaps be better to refer the Committee, if they wish for information upon this point, to the written reports made by the Assistant Secretary to the Secretary, from time to time (often weekly), up to some period in 1828, when, I think, they ceased. I particularly refer to those which were last made, and which are in the possession of the Secretary.

2. *The Excess in Quantity of Writing.* This is not only my experience, as in Regent Street, but perfectly absurd. Every trifling occurrence at the garden is positively required by the Secretary to be reported to him in writing, a system which goes so far as even this, that persons attending visitors at the garden are required to communicate the substance of what they hear to the Secretary; a fact upon which, if the Committee entertain any doubt, I refer them to the gardener and gardener's clerk.

3. *Distribution of Articles from the Garden.* The chief defects in this are, that persons not subscribing specifically to the garden, cannot procure objects from the garden, — a rule which is not only unjust, but which has been the cause of the loss to the Society of a great number of members; and that there is too much form observed in making their distributions. Nominally they are made under the direction of the Garden Committee, to which body all applications are supposed to be referred; but, in point of fact, the Garden Committee has little or nothing to do with them. The distributions are made under the order of the Secretary, who also possesses a power of directing, upon his own authority, any article or articles to be given away, without any reference to the Garden Committee. I do not mean to say that this leads to the irregularities that have been imputed to the Secretary. On the contrary, I think that the distributions are conducted generally with fairness, or, at least, that the instances to the contrary are few in number; but I think there should be no fiction in the case. It would be better if a set of fair and intelligible rules were drawn up for the regulation of distributions, under which they should be made avowedly, by order of some officer, who shall have the power of referring any doubtful case to the Garden Committee for decision, and be responsible for any deviation from his duty on this head.

A system of allowing the gardener to give away common things to the Fellows of the Society, when visiting the garden, has been lately introduced, at my instance, and it has been found to be attended with the happiest effects.

4. *Showing the Garden.* This is at present the duty of the labourers, one of whom is in attendance upon any party which visits the garden; and is not only a source of great expense to the Society, but is attended with very bad effects. In the first place, it is in many cases extremely disagreeable; in the second place, it rarely produces one of the ends proposed, that of conveying information to visitors. The men are in general ill-informed upon the subjects upon which they are questioned, and we find that they not only give no information at all, but, what is worse, inaccurate information. This must, I think, have been apparent to any person who has ever visited the garden, and been so attended on. It would be much better if the measures now recommended by the Committee were carried into effect; I may add, that the plan of labelling every thing was commenced by me several years since, but was stopped by the Secretary, who appeared to consider it an improper interference with his authority.

5. *Admission to the Garden.* At present no Fellow is allowed to issue orders for the admission of visitors, except such as have subscribed a sum of 10*l.*, or upwards, to the formation of the garden. Restraining admission within these narrow limits is not only impolitic, but unjust, and has given so much dissatisfaction, that I have no doubt that many members have resigned in consequence of it only.

The mismanagement of the office in Regent Street consists, —

1. *In the excessive multiplicity of minute details*, which are of no importance whatever, and which cause a large expense in the shape of salaries of clerks, consumption of stationery, postage, and other incidental charges, without any corresponding advantage. The intention of this detail, it is presumed, has been to insure a more accurate and perfect execution of the business of the Society; but this is so far from being the case, that I do not know any office whatever, in which it is so ill executed. Correspondence falls into arrear till it becomes useless to maintain it, or until parties become extremely dissatisfied. Minutes of the Council are frequently not made until a long period, weeks, or even months, after the Councils are held; medals and diplomas are not transmitted for months or even years after they are awarded; for example, there is at this moment in the Secretary's possession a medal awarded to Signor Piccioli of Florence in Feb. 1824, which has never been sent, notwithstanding the repeated offers of individuals to take or forward it; another was awarded to Mr. Foster, the British Envoy at Turin, which was kept in the office for I think two years, and finally delivered to Mr. Foster in person; and there are undelivered diplomas in possession of the Library Clerk, which have been sealed in Council so long since as 1823.

The resignations of members are not recorded, or the steps necessary to this record are not taken, for very long periods after they have been tendered; and this is the real cause of the large deductions (estimated only) which we are obliged to make from the nominal amount of our arrears; for example, Sir Richard Boroughs resigned previously to January 1826, as appears from his correspondence, and from an entry in the Council Minutes of the 19th Jan. 1826, yet his arrears have been allowed to accumulate, the form necessary for his resignation not being complete, until they amount to 18*l.* 18*s.*, at which they now stand in the Society's books. I mention this as an instance, to which there are very many parallels.

2. *In the Publication of the Transactions.* The Committee is already aware of the expensive mode in which they have been got up; but there is another and perhaps a worse evil, namely, the entirely irregular periods at which they appear. The practice of the Society has been to publish two parts annually, but only one was distributed in 1828 and one in 1829, although a notice was publicly suspended in the meeting-room, that a second would make its appearance in July last. The plates for the part now due have been coloured for months, but the letter-press has not yet been commenced; there is also a *Report of the Garden Committee* still unpublished, which has been *standing in type* ever since May last. We have lost great numbers of members by these irregularities.

Espionnage. — Extracts from Mr. Lindley's evidence.

Q. Are you aware whether there was a register at the garden in which reports were made of the observations made by visitors on the management of the garden?

A. They were put in general terms, — very general terms.

Q. Describe the way?

A. If any body had come to the garden, and had spoken in strong terms of any body, an entry to this effect would have been made; "Such a person visited the garden, and was attended by such an individual, and he made use of some very strong remarks — very abusive remarks." Mr. Sabine, without knowing what they were, of course would send for the labourer, and question him privately as to what had passed; in short it was a kind of espionage. It was one of the most monstrous things that were ever put in force. I had a battle about its being attempted to be put in force here, and it is one of the causes, I dare say, why the letter [a letter from Mr. Lindley to Mr. Sabine, referred to in other parts of the evidence] of October, 1838, was destroyed; for I remonstrated in that letter most strongly against it, as being most improper, and perfectly disgraceful, that such a system of espionage should be attempted to be put in force; that attempt, therefore, failed, which was made to carry it into effect here in Regent Street.

Q. What! in Regent Street?

A. Yes, but I would not submit to it.

Q. Was it attempted to establish the same system in Regent Street; that every observation made by the Fellows who came here should be inserted in the Register?

A. It was an order for me to keep a journal of the occurrences which passed here; that journal has been kept, but not in the spirit in which it was intended to be kept.

Q. In what spirit was it intended to be kept?

A. I should note down observations made in the same manner that the people of the garden noted them down.

Q. Personal observations?

A. Yes.

Q. By personal observations do you mean observations totally unconnected with the garden, or with any thing relating to the garden?

A. I should not have done so, I know; but I was to note down what persons said when they came here.

Q. Supposing a visitor at the garden should have disapproved of a person, and said of one of the officers of the garden that he was "a great fool, a drunken fool;" would that have been reported?

A. That would have been considered something to note down.

Q. Would that have been remarked upon as a person having said something abusive, or would it have been passed over altogether?

A. No; there would have been some statement made, something which would have led to an enquiry. I resisted that system here. I would not submit to it.

Q. In short, any conversation of a Fellow of the Society visiting the garden as a visitor would have been reported to Mr. Sabine?

A. In that way certainly.

Q. Do you know whether it originated entirely with Mr. Sabine?

A. There is no question about it all, I presume.

Q. Was that ever submitted to the approbation of the Council or of the Garden Committee?

A. I don't know about the Council, but certainly not of the Garden Committee.

Q. Do you know where that order is to be found?

A. I dare say it is to be found at the garden somewhere. I dare say it is there.

Q. Are those reports kept in a book?

A. No; they are only on sheets of paper, which may be destroyed.

Q. Those reports were destroyed from day to day then?

A. I presume so.

Espionnage. — Extract from the evidence of Mr. Booth, the Garden Clerk.

Q. It has been stated to the Committee that the head gardener and the under gardeners, and the labourers who were in attendance upon the visitors, were directed to take notes of the observations that were made by the visitors, and to report the same to the officer of the Society?

A. Yea.

Q. Did those reports pass through your hands?

A. They were all made by me.

Q. Have you made reports of observations that visitors have made frequently?

A. Every day, in a journal called the "General Occurrences of the Garden."

Q. What did you report; what was the subject of the report?

A. Why it was mentioned in the copy-book of visitors of the garden. If Sir John Sebright had been at the garden with a party, it would have been stated in this way: — "Sir J. Sebright visited the garden, and was attended by so and so;" or, if any particular visit, a member of the Society, it would be stated "he was attended by so and so."

Q. "By such a labourer?"

A. Yea.

Q. Well?

A. If any remarks were made, whether they found fault with the garden, or approved of it, they were noted down, sometimes on paper, or told to me in the afternoon, and sent in to Mr. Sabine.

Q. If any observations were made upon the officers, or any comments upon the system of

the garden, were those observations reported and copied by you?

A. Yes; if any visitors made any particular remarks they were noticed.

Q. Upon the cultivation of the garden?

A. Yea.

Q. Or not upon the cultivation of the garden?

A. And upon the officers of the Society.

Q. Supposing a visitor, without making any observations upon the cultivation of the garden, had disrespectfully spoken of Mr. Sabine, would that have been reported?

A. It would.

Q. Have you ever known an instance of such personal observations made upon any officer of the Society having been reported?

A. Yes; but I cannot specify any report, because they are given to Mr. Sabine.

Q. But, in point of fact, you have known personal observations on the conduct of an officer made by some visitors, reported by the labourers, and transmitted to Mr. Sabine?

A. Yea.

Q. Were those observations addressed to the attendant, or did they pass between the visitors?

A. Sometimes they were addressed to the attendant, and sometimes they were not.

Q. Observations between each other?

A. Yea.

Q. Then this attendant was a sort of spy upon the conversation of the visitors, as I understand you?

A. In one respect he was a spy, but he was an attendant.

Q. But has it been of frequent occurrence that the conversation between two indifferent persons going to see the garden has been reported by the attendant, and that report has been made to Mr. Sabine?

A. Yes.

Q. Are you aware whether those reports were submitted to any Garden Committee?

A. No, I do not think they were.

Q. The attendant had directions to report, I presume?

A. I believe there is an order for the purpose in the order book.

Q. Now do I distinctly understand you to say that the attendant upon visitors actually received an order to report what they said?

A. Yes.

Q. Did that order give them instructions as to what they were to report?

A. Yes.

Q. It did?

A. Yes.

Q. Now state what the order was, as well as you can recollect?

A. The order was, "That visitors were to be attended by Mr. Munro, or, in his absence, by me or the under gardener, and that we were to report to the Secretary the particular remarks that they made upon the garden, the management of it, or whatever things occurred in the course of their visit to the garden."

Q. Now, in point of fact, has an instance ever occurred where the attendant reported private conversations between the visitors, which were not addressed to the attendant; observations made between them?

A. Yes.

Q. Were any remarks made upon that report by Mr. Sabine?

A. He always, when he came to the garden, sent for the person who attended upon these particular visitors, and then enquired more particularly into what they might have said.

Q. Has Mr. Sabine ever given any officer of the garden, that you are aware of, any orders to report conversations that ensued between two indifferent persons; has he ever given any orders to report conversations which the attendant upon visitors might hear them make relative to the management of the garden?

A. They were to report generally every thing connected with the garden which they might hear the visitors say, in order that the Secretary might be informed, and know what to do when he saw the party afterwards.

Q. He gave that reason for it, did he?

A. Yes, that he might be informed of what they said, that he might know what to say to the party afterwards when he met them.

Q. Did it ever occur to you, in those reports which you have made of the conversation and observations of visitors, that you have ever inserted in such report, "That Mr. So and So has visited the garden, and has expressed himself in strong terms of disapprobation against the conduct of such and such an officer?"

A. Yes, it has.

Q. In case you had made such an entry in the registers, what steps would have followed from it?

A. Mr. Sabine would have taken the papers, and have enquired for the parties.

Q. Supposing any visitors had made an observation reflecting upon any officer of this Society, but totally unconnected with the objects of the Society, would that have been reported?

A. If there was any thing that applied to the garden, that would have been reported.

Q. But supposing there was nothing that applied to the garden, but to the people of the garden?

A. If it had applied to the officers of the Society, it would have been reported.

Q. But supposing that observation, though it applied to one of the officers of the Society, was totally unconnected with the objects of the Society in general, would it have been reported?

A. Yes, it would.

Q. If it referred to an officer?

A. Yes, if it referred to an officer of the Society.

Q. If any observation had been made detracting from the character or the conduct of one of the officers of the Society upon a subject totally unconnected with the garden, would such an observation have been noted?

A. Those are not transactions we should take so much notice of; if it was very violent against Mr. Sabine or Mr. Lindley, it would not be put in the exact words, but it would be put in this way, "Mr. So and So was very abusive of a certain person."

Q. Then it would be sent to Mr. Sabine, or any body else, and they would send for the attendant, and so obtain the particulars?

A. Yes.

Q. Did you ever know Mr. Sabine cross-examine a labourer for the particulars of any conversation which was represented in the register?

A. Yes.

Q. Did you ever know Mr. Lindley do the same?

A. No.

Espionnage.—Extracts from the evidence of *Mr. Munro*, the Head Gardener.

Q. Did it ever fall to your province to transmit any conversation that took place in the gardens between the visitors and the persons who attended them? Do you know whether it was any part of your office to do so?

A. Yes, it was.

Q. To repeat to whom?

A. To repeat it at the Council Room to the clerk, what took place with the visitors when they were going round the garden.

Q. At the Council Room?

A. Yes.

Q. Well, was there ever any conversation that took place between the parties visiting the garden?

A. I was only required to state what was said to me personally concerning the garden.

Q. If any observations were made?

A. Yes, if any observations were made upon the garden.

Q. If any visitors, speaking to you, made any observations relating to the garden, were

you directed to go and report those observations at the Council Room?

A. Yes; to be put upon a sheet of paper, and laid before Mr. Sabine.

Q. Were those observations relating merely to horticulture?

A. Merely to horticulture and different other things.

Q. What do you mean by other things?

A. With regard to the management of the garden and offices, and the people connected with it.

Q. Supposing some of the visitors made remarks either upon Mr. Sabine, or upon the office of the Society, was that expected to be reported?

A. If I chose to do it, it would have been put upon paper.

Q. But would you have put down any conversation that visitors carried on between themselves, which was not addressed to you?

A. No, certainly not; and it was seldom I

put any conversation to myself upon paper, because I thought it was too ridiculous to do it.

Q. Did you, in point of fact, ever state to the clerk, any comments which you heard visitors make on the conduct or character of the proceedings of the officers of the Society?

A. I believe I did.

Q. In what manner?

A. Merely telling him what was said about the officers of the Society, either regarding the Garden Committee or the Council.

Q. Any accounts which you heard, finding fault, or either approving or disapproving of the proceedings?

A. Yes.

Q. Were those observations addressed to you, or was the conversation of the visitors between themselves?

A. No; they were addressed to me.

Q. Were any of the visitors aware that you would make such a communication to the clerk?

A. No, certainly not.

Q. You never stated to any visitors "the observations you make to me I am bound to communicate to the Secretary or the Council?"

A. No; I never did. It is very seldom that I made any communication, without it was something very severe, which I wished should be made public, for my own sake, as well as for that of the officers.

Q. Are you aware whether the labourers who went round occasionally with the visitors were also expected to make similar communications?

A. They were ordered to do so.

Q. Did they make it through you to the clerk of the garden, or did they make it distinctly to you as gardener?

A. They made it to the under-gardener, or they came to the clerk of the Council to report it in the evening.

Q. Were those reports sent to the Garden Committee, or merely to Mr. Sabine?

A. To Mr. Sabine.

Garden Reports and Management.—Extracts from the evidence of *William Beattie Booth*, the Garden Clerk.

Q. What are the principal parts of your duties?

A. My duty is to attend to the things that are received in the garden, and the things that are sent from the garden, and to enter in a book the different lists and names of the things.

Q. Is it not customary, before any works are commenced in the garden, for reports to be submitted to the Secretary, describing what those works are to be?

A. Yes, it is.

Q. Were those reports copied by you, or drawn by you?

A. Yes; formerly they were all copied before they were sent in to Mr. Sabine, but latterly they have been discontinued by Mr. Sabine's orders.

Q. The copying?

A. Yes, the copying; and they have not been delivered in to Mr. Sabine for, I should say, three months.

Q. But previously to that period reports were made and delivered in to Mr. Sabine, upon all the minute works that were to be carried on in the garden?

A. Yes.

Q. Describe the sort of report?

A. There were six reports given in: one from the experimental ornamental garden; another from the flower-garden, and another from the arboretum, by the under-gardeners. There was another from the experimental fruit and kitchen, another from the kitchen-garden, and one from the orchard; those were the six. And they were weekly given in,—on Monday they were arranged into two heads, the ornamental garden, and the fruit and kitchen garden; they described the work that was to be done in the course of the week in each department: and there was another report of what had been done; a detail of the work that had been done in the last week.

Q. Was this done every week?

A. Every Monday morning.

Q. Did it not occupy a great deal of time?

A. A very great deal of time; they were not got rid of till night, and they were always sent to Mr. Sabine with the daily report.

Q. Were there daily reports besides?

A. Yes.

Q. Written daily reports?

A. Yes.

Q. Do you not consider it an unnecessary waste of time, the preparing of all these various reports and written documents?

A. There is a vast deal of labour, as well as expense, incurred.

Q. Does ever any inconvenience arise from the delay in the progress of the work, in consequence of its being necessary to give in previously a report of them to obtain the sanction of Mr. Sabine before they are commenced?

A. If all the other works that are ordered to be carried on by Mr. Munro had to wait for Mr. Sabine's sanction, the season would be lost.

Q. Do you consider that the garden, and more especially the horticultural garden, has been kept with as much neatness and regularity as it ought to have been?

A. Yes, I do; considering what the flower-garden is, that it is laid out in beds very different from what we generally understand to be a flower-garden.

Q. But do you consider that those beds and borders, and the digging of that flower-garden have been kept with as much neatness and regularity as would have been expected in a gentleman's garden?

A. The beds and borders may not have been as clean at certain seasons of the year, but generally they have been kept very clean.

Q. In the summer?

A. Yes.

Q. Taking the whole of the garden together, do you consider that it has been kept with as much neatness as a gentleman's garden would have been kept?

A. Yes, I do.

Garden Reports and Management.—Extracts from the evidence of *Mr. Munro*, the Head Gardener.

Q. Do you consider that you have been prevented occasionally from carrying on works in the garden as expeditiously and as scientifically as you could have done, in consequence of the necessity you were under of giving weekly reports to Mr. Sabine of the works of the week before they were carried into effect?

A. Certainly; I could not carry on any but what was ordered to be carried on.

Q. Were those orders sometimes so long de-

layed, that inconvenience arose in the conduct of the garden?

A. Why, I believe very few have been answered for the last twelve months.

Q. Explain?

A. Reports were made and laid upon the table in the Council Room, but were not looked at.

Q. Has not great inconvenience in the garden arisen from these reports?

A. Yes, very great inconvenience.
Q. You could not act in consequence of their not being attended to?
A. No, certainly not.
Q. Did you ever act of your own will in any thing relative to the garden, without reference to any report, and did you ever receive a reprimand for so doing?
A. Sometimes I did, certainly; I was obliged to act without getting an answer to the reports very often.
Q. Was it contrary to the wish of Mr. Sabine that you should so act?
A. I cannot say for certain that those reports though they have never been answered, have not been looked at.
Q. I did not so understand; but have you ever been reprimanded for acting without orders?
A. Yes, I have been.
Q. In your opinion, don't you think there has been a considerable waste of time in the perfection of those reports, as well as a waste of paper and stationery?

A. Certainly, a great waste of time, and a great waste of paper.
Q. Without any sufficient advantage?
A. Without any good whatever.
Q. Do you consider that the control under which you act as gardener of the Society so far interferes with your business, as to prevent you in some instances cultivating the garden in the best manner?
A. In a great many instances.
Q. Do you think if you had been allowed to act on your own discretion, that you would have produced more beneficial results from the cultivation of the garden?
A. Certainly; had I been allowed to do as I pleased, instead of being called upon to do as the Secretary thought proper. If the garden had been under my charge, the things would have gone on in the regular way, and the garden would have been a great deal better.
Q. In short, the interference of the Secretary produced an inconvenience?
A. Certainly, as far as cultivation goes.

Gardeners sent out by the Society. — Extract from the evidence of Mr. Sabine.

Mr. Sabine produced to the Committee a list of the gardeners who had been recommended by the Society, and expressed himself proud of them. The first class of men are those who receive about 100*l.* a year, some of them much more; they are first-rate gardeners. Has had some applications for gardeners a second time, and mentioned Walter Burrell, Esq., and some other gentlemen. The second class are fit to be gardeners to any gentlemen, and are going on well. M'Culloch is with the Pacha of Egypt, who has two gardeners from the Society. The salaries of one of the gardeners who went from this Society is said to be equal to 500*l.* per annum, and of another 300*l.* a year. The gardeners are instructed at the garden, their conduct and be-

haviour is under the inspection of Mr. Sabine. The gardeners are there sometimes three or four years. He does not wish them to come quite as youngsters; they could not obtain much knowledge in forcing vines. Those who had no instructions when they came were kept a certain time, then sent out to private gardens, and afterwards taken back. They could not learn the forcing of vines, but would learn especially the manner to force pines, and every thing relating to training trees. The trees are well trained and pruned, Stephenson never came back to Mr. Sabine, after losing his place, therefore he supposes there was something wrong. Watching the moral conduct of the gardeners has been particularly observed.

Gardeners sent out by the Society. — Extract from the evidence of Mr. Munro.

Q. A great many men have been sent from the garden to different situations as gardeners since you have been there, I believe?
A. Yes.
Q. Do you consider that those gardeners who have turned out well, and been highly approved of at the different places, have acquired the better part of their information from the Horticultural Garden, or that they were good gardeners before they came?
A. They are a great deal in the garden.
Q. But were they good gardeners before they came?

A. Some of them were, and some were not, and some according to the nature of the pupils themselves; they could learn a great deal if they were willing to learn.
Q. Certain experiments were going on there, and if they liked to attend to them, and read at the same time respecting them, they had the means of getting a good deal of information?
A. Yes, we had plants, trees, and different things, — proving the names of things of that sort is very useful, and this they could not get in a great many gardens.

Gardeners sent out by the Society. — Extracts from the evidence of Mr. William Beattie Booth.

Q. How long have you been in the employment of the Society?
A. Six years.
Q. Do you conceive, if you had come to the Society without having any previous knowledge of gardening, you could have acquired sufficient knowledge in the service of the Society, so as to become what is called a good gardener?
A. No, I do not.
Q. Do you conceive you have generally greatly improved yourself in your profession as a gardener?
A. In various branches I have.
Q. In some branches you have?
A. Yes.
Q. Should you say that, upon the whole, the garden of the Society was a good and efficient school for young gardeners?
A. Not such as a gentleman's garden is.

Q. Why is it not so good a school as a gentleman's garden is?
A. Because there is no family to supply in the kitchen department. In a gentleman's garden there is always a supply required at the seasons of the year when the different productions should be in season, and the gardener always studies to have them at that period; but in the Society's garden it is not the case, there is no supply.
Q. Have there not been various gardeners recommended by the Horticultural Society to different gentlemen?
A. Yes.
Q. Have they given satisfaction generally?
A. I conceive many of them to have given satisfaction, but then they were good gardeners before they came to the Society.
Q. You do not think, then, that those gardeners who have been recommended by the

Society, and have given the greatest satisfaction, have acquired much of their knowledge in the garden of the Horticultural Society?

A. No.

Q. Mr. ——— was a good gardener before he came?

A. Yes; and there have been none recommended but what have been good gardeners before they came to the garden.

Q. Those are the gardeners who have given satisfaction?

A. Yea.

What is called holding a Council. — Extracts from the evidence of *N. A. Vigors, Esq.*

Q. You are a member of the Committee of the Horticultural Society, I believe?

A. Yes; I have been so since May last.

Q. Is this the first year that you have ever been a member of the Council?

A. It is.

Q. Has it been the custom of the Council to have material business transacted by them?—Has material business been transacted by the Council in your presence?

A. I have understood that the whole business of the Society has been transacted by the Council, but I cannot answer that that has been so; but we have always understood so: it is supposed that it is the case. We take it for granted to be the case, that the whole business of the Society is transacted by the Council in the first instance.

Q. In point of fact, when you have attended Council meetings, has business been submitted for their approval?

A. The business, generally speaking, is submitted for their approval, but it always happens that the business of the Society is settled beforehand, by some of the more efficient members, who take a greater interest in the matters of the Society. What is generally laid before us is the business of the day; those are in form introduced by the members who are the official members of the Society, and who, of course, are looked upon to be the most acquainted with the business; it is their duty to lay them before us. It generally proceeds in this form:—The matters of finance are stated, and a list of bills is laid before them which are to be paid. It is generally assumed that these bills have been examined, and our approbation is asked for the payment of them. It generally follows, as a matter of course; and it very seldom, in fact, happens (I have never known it either in this Society, or the Zoological Society, or any others, and there are many others which I could mention that are modelled upon the

same principle), that any question ever arises on the subject. It is generally taken for granted that the bills, which are laid before us to be approved, have been submitted to the proper officers of the different departments; it is etiquette not to examine into the matters which are laid before us. It is mere matter of form.

Q. Then the Council have not at all interfered in the management of the Society?

A. It is not the custom, I think, to do so. It is a species of etiquette, of delicacy of the members of the Council towards those who are the efficient members. We take for granted that they have looked into the detail of the matters, and that every thing is correct. It is more, I believe, a matter of etiquette than any thing else, passing our approbation,—a matter of course. I believe that it is decidedly felt to be so by the members. I could say that I might at any time have asked for the accounts, and have looked into them; perhaps it was my duty to have done so, as a member of the Council. I say, I do not conceive myself in the right for not having done so; but I must say, that never was there the smallest suspicion of any thing that was necessary to be looked into, upon any matter, or any thing, upon the minds of the rest of the members of the Council, otherwise we had the opportunity of doing so, as the accounts were before us, which we never examined, from motives of delicacy. We were all invited to do so, but feeling that there was nothing that required our superintendence, it is a mere matter of etiquette, and considered as such. I believe it is usual for most of the members of societies who are not actually employed in affairs of the society, to pass over matters with the same indifference. It is a sort of feeling we had, not to interfere in these matters. It might be considered as a kind of indelicacy towards the officers who laid the matter before us.

What is called a Garden Committee. — Extracts from the evidence of *Peter Grant, Esq.*, one of the Members.

Q. I believe you are one of the Garden Committee?

A. Yea.

Q. Are you in the habit of attending often at the Garden Committee?

A. Yea. I have attended regularly every week, with the exception of one day, since May last.

Q. Does the Garden Committee superintend very accurately the management and labours of the garden?

A. No, certainly not.

Q. It does not?

A. No, it does not. The Garden Committee does not certainly. I have not. There never has been any thing of the kind done when I have attended.

Q. There is a quarterly meeting of the Garden Committee I believe?

Q. No. There is a monthly meeting of the Garden Committee.

Q. During the adjournment of the Garden Committee, who gives directions as to the arrangement and superintendence of the garden?

A. I am unable to answer that question.

Q. What are the duties of the Garden Committee?

A. I cannot answer that question. I don't know what they are.

Q. Are you not able to give us an opinion what the duties are?

A. I can give but very little information; I attended regularly as one of the Garden Committee, but I am sure I don't know at this moment what their duties are.

Q. What do they do?

A. I may answer, nothing. There are minutes read, as it is usual, of the former meeting, but it is only matter of form; and then the issues of several things from the garden, which have already been made, are read over for the sanction of the Garden Committee. In fact I have never sanctioned them. I don't consider I have given a sanction to any thing. I have never been asked. The truth is, that only in one instance have I ever been called upon to perform any duty at all, and that was in approving of a boy to be employed in carrying messages from the gate to the Council.

Q. I think you have stated that you have regularly attended all the appointments of the Garden Committee since May last?

A. Yea.

Q. Is the Committee to understand that no

business has ever been brought under the discussion of the Garden Committee?

A. No, certainly.

Q. No business at all?

A. With one exception, as I have stated. There was a certain routine gone through, the minutes have been gone through, but nothing ever was submitted for the approbation or discussion of the Committee. The thing was all ready prepared, I believe, whatever it was.

Q. Have the Garden Committee, since their appointment, ever examined into the expenditure?

A. They have not.

Q. Have they ever enquired as to the management or the expenditure of the garden?

A. No, they have not.

Q. Are you a member of the Council of the Society?

A. No. There are no instructions for the

duties of the Garden Committee laid down in the book that I have seen. If you look over the by-laws of the Society, I believe you will not find any instructions for the guidance of the Garden Committee with respect to their duties.

Q. Then no account whatever of the duties of the Garden Committee was ever submitted to you?

A. No, never.

Q. Then you do not conceive the Garden Committee has a right to take credit to themselves for any good management of the garden, or any discredit for very bad management?

A. Certainly not.

Q. Did any discussion ever arise in your presence among the different members of the Garden Committee, as to the proceedings that should take place?

A. No.

The Plan of the Garden, and of the different Horticultural Structures erected in it. — Extracts from the evidence of Mr. Atkinson, the Architect.

Q. Have you any complaint to offer to this Committee?

A. Yes. I consider that I have been treated very unhandsomely, and very ungentlemanly by the Society. At the first commencement, after the Society had taken the ground at Turnham Green, I happened to be here one day with Mr. Sabine, and he put some questions to me about what I would charge to make a plan for him? I told him I would consider of it till the next day, and I would write to him, and this is a copy of the letter which I wrote (producing the letter). In consequence of this I went on, and made all the plans, and all the designs, and every thing they wanted. I never neglected them a single moment. But what was very extraordinary, when the buildings were to be erected, or there was any thing to do, never, except in one instance, was I called upon to attend the Committee or Council to give my opinion. The plans were agreed to in some way or other, and then Mr. Sabine, as he constantly does, made some alteration of his own, so that hardly a single plan was executed correctly.

Q. You mean that the Council took no superintendence of the plans that were submitted by you?

A. I doubt it very much. I should like to know whether this letter was ever laid before the Council or not. I rather doubt it.

Q. When is the date of this letter?

A. The 5th February, 1822. As an instance of the interference of the Secretary, he wanted

a plan of the first pine-house that was built. It was only upon a small scale, and I made out a plan for the house, as I supposed it was ordered by the Council. When it came to be executed Mr. Sabine insisted upon the tail of the house forming the walls of the back pit. Now any person that knows any thing about that at all, must know that the back pit would be endangered by drying the bricks with the flue, and if it got overheated it would set fire to the back pit.

Q. State what you suppose to be the result of your plans not being attended to?

A. I wrote a strong letter to Mr. Sabine on the subject, telling him what would be the consequence. Mr. Sabine still persisted that it should be according to his plans and not mine, till at last, when the thing was going to be done, Mr. Lindley went to him, and said, "Now, Sir, is it to be done according to your plan or Mr. Atkinson's?" He said, "Mine, certainly." Mr. Lindley said, "You know what the consequences may be; will you be answerable for the building if it should be burnt down?" "No," said he, "I will not be answerable for any thing." Then it was built according to my plan. Afterwards there were two other pine pits built, which I remonstrated against as bad things, and very expensive things, and it was proved so afterwards by me, which they called Buck's Pit. There were two, one called Buck's Pit, and the other Scot's Pit.

General Management. — Extracts from the evidence of Henry Bellenden Ker, Esq.

The expenditure on the gardener's house, which I took considerable interest in, you will find from Mr. Lindley's letters. The gardener's house was taken at 84*l.* a year, for the purpose of lodging Mr. Munro, the gardener, and some one clerk. Mr. Sabine conceived the house too large, and at too high a rent, and he said he would pay 50*l.* of the rent. The taxes are considerable: 34*l.* a year, I think, and the rent 84*l.*; and Mr. Sabine paid 50*l.* a year of the rent. There appears to have been an expensive housekeeper, and expensive repairs, amounting to 41*l.* or more, for putting up water-closets, and making the house comfortable; and there is the housekeeper's board-wages, and coals and candles, and so on: so that, allowing 10 per cent on the money laid out on repairs, and allowing for Mr. Sabine's advance of 50*l.* a year, it makes the expense of lodging the gardener and clerk 230*l.* a year; and that I consider to be a grossly indecent and almost fraudulent mode of applying the funds of the Society. If the house is now given up, it will have cost the Society, includ-

ing repairs, more than 300*l.* a year. I have not the slightest doubt about that. I consider this sort of jobbing as to the houses, that is, getting a good house for the Secretary, under pretence of its being for the gardener, one of the greatest grievances of an honorary secretary, and which I consider to be a main feature in the management of this Society.

If there were a little more democracy introduced, and the members had a little more influence in the Society, instead of the oligarchy of the Council, I think it would be a great improvement.

Q. Do you say that the minutes of the Garden Committee are kept secret?

A. Yes, they are kept secret; so, as I before said, are the minutes of the Council. I wish to observe, that there is no library for the young gardeners. According to my opinion there is not a man in the garden, except, perhaps, Mr. Munro, fit to teach them to prune a tree. No one gives them lectures, and the result is, they send out ignorant uneducated gardeners.

General Management, and the Plan of the Garden.—Extracts from Mr. Loudon's evidence.

I consider that the Horticultural Society has no more occasion for a garden than the Society of Arts has for a workshop or a manufactory. No Society ought to attempt any thing that can be done by individuals. There is nothing that has been attempted by the Horticultural Society that could not have been better done by individual gardeners and nurserymen. Instead of collecting and cultivating all the fruits, with a view to naming them, if the Society had offered handsome premiums to the nurserymen, and arranged with a different nurseryman, or other gardener, commercial, private, or amateur, for every different fruit, all the fruits would have been collected and named, and might have been published by the Society, at a fraction of the expense which is now incurring for the same object. This plan would have been attended by this great additional advantage to the public; that the nursery where any particular fruit was proved would have been ever afterwards the stock nursery for that fruit, and would have been applied to by all the country nurserymen. I should say the same thing as to culinary vegetables, flowers, and experiments of every kind; firmly adhering to the general principle of the Horticultural Society's acting as a *stimulus to others*, and entering into *no details itself*.

But supposing the Society determined on possessing a garden, and having obtained the 33 acres at Chiswick for that purpose, I contend that it is most improperly laid out. It is begun on so extravagant a scale, I mean with reference to walls, hot-houses, buildings, &c., that its completion could scarcely ever have been contemplated by its founders without government's assistance. It is too much frittered into parts; it contains miles of hedges, not one yard of which was necessary; it contains three times the requisite length of gravel walks, and more than double the requisite extent of walling. It contains some acres of grass, and a serpentine canal, which were totally uncalled for. These hedges, walks, walls, grass, and water, have added much to the first cost, and greatly increased the annual expense of management.

The orchard is the most valuable department in the garden; but even here there are hedges. A great error in the management has been, first, sowing down the compartment containing the standard trees, with tap-rooted plants, such as the red clover; and next, breaking it up and planting it with exhausting plants, such as the potato. After the trees were planted, it ought never to have been once dug or cropped in any way; it ought merely to have been hoed, to destroy weeds. All digging among fruit-bearing trees is highly injurious to them, by preventing their roots from coming near the surface. This hoeing, or slightly stirring the surface with a fork, would have cost incomparably less than the crops of clover and potatoes, and the trees would have been in a far better state. Having said this, I must not omit to state that I consider the orchard by much the most valuable part of the garden, and, indeed, worth all the other parts put together; and this the more especially, as the young man, Thompson, who has the management of it, has paid the greatest attention to the subject of fruits, and is likely to bring the experiments going on to a useful conclusion.

The next division is the flower-garden, which, with the exception of some plants from North America, and perhaps a few pæonies and phloxes, contains nothing that could not be found in every nursery, before the Horticultural Society had its existence. It is full of walks and box edgings, which add to the expense of keeping.

Of the arboretum I have given my opinion in the *Gard. Mag.* (Vol. V. p. 344.); whether it is considered in the light of a botanical collection, or a specimen of landscape gardening (and it is evident, from its plan, that it is an attempt to combine both), I consider it a disgrace to the country, hitherto eminent for ornamental and landscape gardening.

With respect to the general arrangement of the Society, I think some alteration would require to be made in the charter, and that a new set of by-laws should be framed. The Council, I think, should be liable to be totally changed annually, as in the Geological Society, and the President should not hold his office more than three years, or even, perhaps, one year. Much of the evils of the Horticultural Society, as well as of other societies, originate in the perpetuity of the president. I should prefer a president elected by the general sense of the Society, instead of one chosen by the Council, and balloted for by the some half dozen of members who attend at the annual elections. Men that can speak (and there has not been one in the chair that could, in my time), and have a talent for eliciting discussion, such as takes place at meetings of the Geological Society, should be chosen. Much good would be done by free discussion on the subjects of the papers read or fruits presented; or, at any rate, there would be some entertainment. There ought not to exist that invidious distinction between Fellows of the Society who are, and those who are not, subscribers to the garden. Not a plant, cutting, or seed ought to be given away direct from the garden, or in consequence of written applications to the Society, but to nurserymen or other commercial gardeners. All spare plants, cuttings, or seeds, ought to be given away at the meetings of the Society to those who happen to attend; and the officers of the Society ought on no account to be liable to be written to by country or other members (always excepting commercial gardeners) for grafts, seeds, plants, &c. There can be no end to these sorts of applications which add much to the expense of conducting the business of the Society, and cannot be otherwise than sources of dissatisfaction to all parties. Every Fellow of the Society ought to be allowed free access to all the books, papers, accounts, and other documents of the Society, at all reasonable times, without application to the Council as at present. All Fellows ought to have a right to give orders to see the garden, and the library, and models of fruits; and all practical gardeners whatever ought to have free access to the garden at least on one day of the week. A professional accountant of eminence ought to inspect the accounts of the Society once a year, and prepare a balance-sheet; and he ought to be made responsible for its correctness.

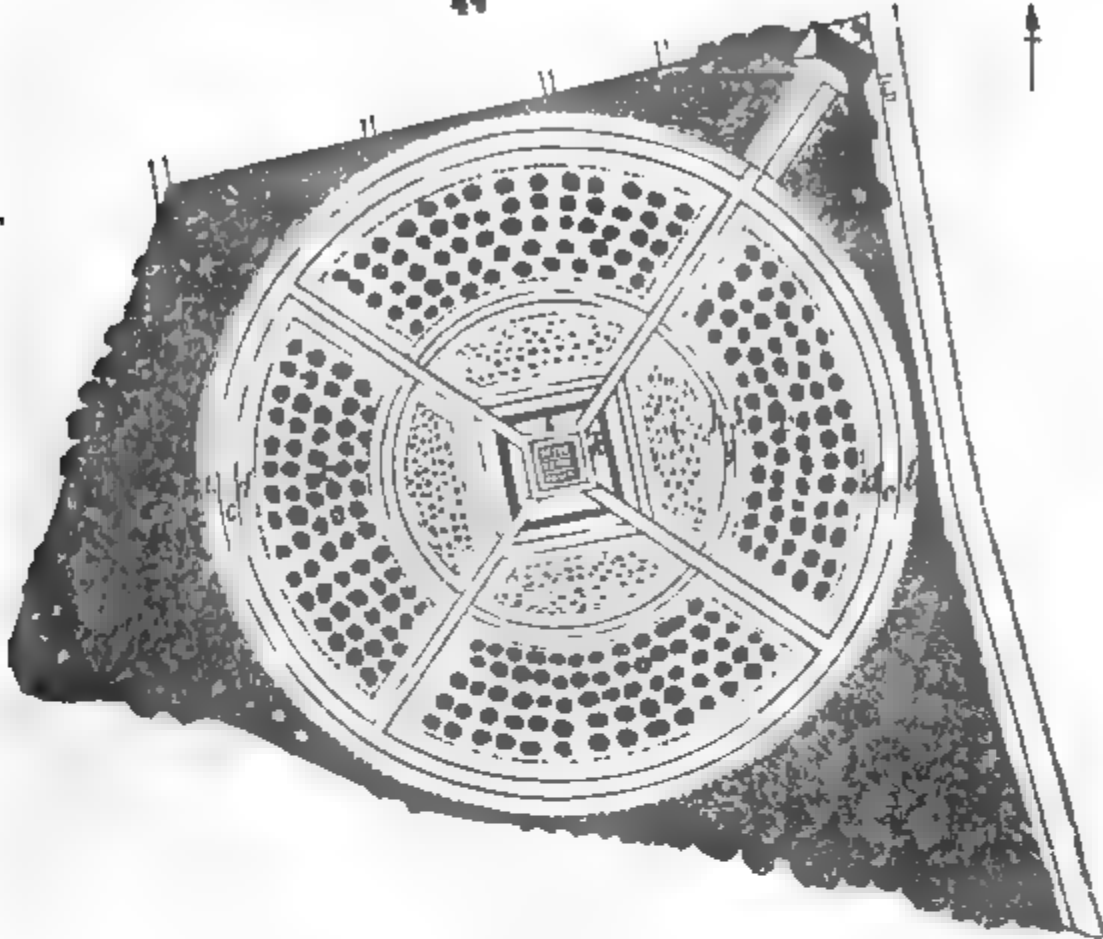
The garden, in my opinion, might be given up without the slightest injury to the advancement of horticulture; and all the objects proposed to be effected by the Society might be attained in a better manner than they possibly can be in any wholesale experimental garden, by the separate experiments of individuals. A garden of an acre, near town, for the purpose of laying in articles by the heels, as the technical expression is, when they were received by the Society, and to contain them till it was convenient to send or deliver them out, is all that I can conceive necessary; but even that, I should say, would be more cheaply done by any responsible nurseryman, who should consent to devote a plot of ground, and the requisite assistance when wanted, to the purpose in view.

But as the Society have got a garden, should they wish to keep it, and render it useful, then

I should propose the following arrangement, already hinted at in the *Gardener's Magazine* (Vol. II. p. 350.) [and roughly indicated by the accompanying sketch] (Fig. 44):—

I would place the arboretum in the circumference (a), filling up all the irregular angles, and reducing the space within to a perfect circle. The ground thus occupied by the arbo-

44



retum, I should suppose, might be about ten acres. I would cut the main roots of all the trees to be removed from the present arboretum to the new one this spring, and, in the next autumn I would remove them thither, arranging as hinted in the *Gardener's Magazine*. Having planted them, I would never afterwards crop or dig the ground, but merely keep it clean of weeds by hoeing. I wish this to be particularly kept in view, because, applied to the arboretum and the orchard, it is one of my main sources of lessening the annual expense of keeping the garden. The pruning, hoeing, and filling up deaths, of these 10 acres, could surely not amount to more than 100*l.* a year; I think I could get a nurseryman to undertake it for seven years at half this sum.

Within this arboretum I would have a zone for a collection of herbaceous plants, and more particularly of such as were ornamental. This might contain one acre (b).

A circumferential walk might contain another acre, or three fourths of an acre (c).

Another zone for roses, alternating with geraniums and hollyhocks, and with a zone or endless bed in front, to contain all the different sorts of florists' flowers, and bulbs and other finer herbaceous plants, of which there are numerous cultivated varieties, might contain another acre (d).

It will be observed that one walk serves for the arboretum and two beds for these herbaceous and border flowers, instead of the hundreds of beds, and miles of walks and alleys and hedges, which are required in the present arboretum, flower-garden, rose department, and in different other parts of the garden, as now laid out [See the plan, as originally published by the Society, in *Encyc. of Gard.*, 1703, and here repeated, to admit of compa-

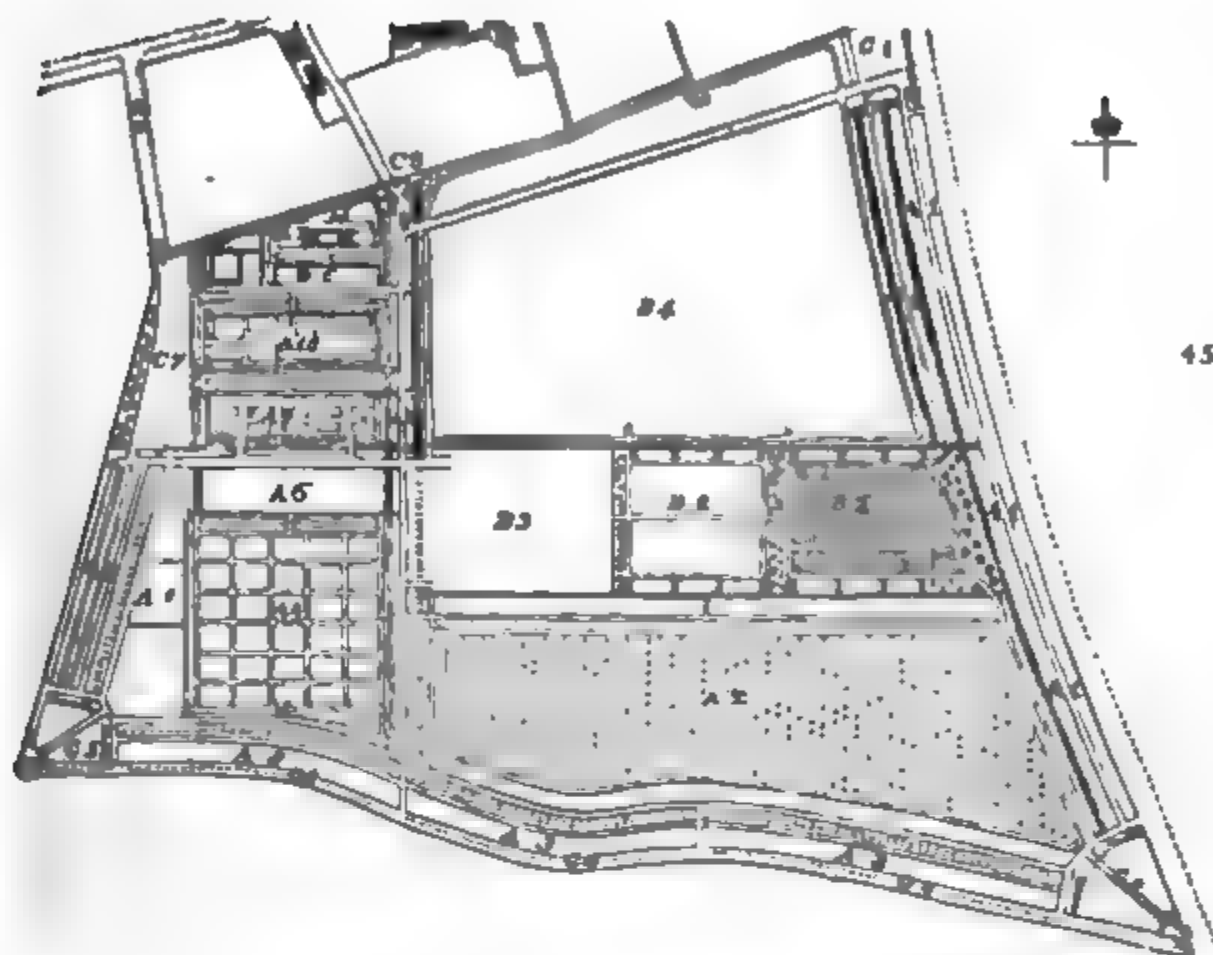
ri-son, Fig. 45.]. The saving in the annual management, by my arrangement, will be great in proportion to its simplicity.

The next zone I have indicated as orchard, and I should propose it to contain at least 15 acres. I would cut the main roots of all the standard fruit trees now in the garden, in March or April, and remove them in November next. Having planted them, I would never afterwards dig or crop the ground, but keep it clean by hoeing. The annual expense of hoeing 15 acres could not exceed, at an average of 7 years, 15*l.* a year. Pruning the trees, renewing deaths, collecting, sorting, and keeping the fruits, and making alterations, I do not take into consideration, as this would form one of the principal annual expenses of the garden.

The border (f) within the orchard I would devote to collections of gooseberries, currants, and raspberries. The walk (g) need not be above 4 ft. broad. The border (h) I would devote to a collection of strawberries; the compartments (i) to culinary vegetables, and the borders (k and l) I would not dig, but devote entirely to the roots of the wall trees.

For the experimental kitchen-garden, 2 or 3 acres would be amply sufficient, nay, even half that quantity: because, as all culinary vegetables cannot be proved at once, one sort might be first proved, and then dismissed altogether from the garden, to make room for another. On this principle, half an acre would be as good as 10 acres.

The centre of the garden, open to the sun in all directions, I have laid out as a forcing-garden, containing about an acre, and surrounded by about 800 ft. of walling. I have shown, in the interior, one forcing-house for proving vines, and when that was done, it might be employed in trying to grow other ligneous



exotic fruits, such as the mangosteen, bread-fruit, &c. I have shown a range of pits for proving pines, and for different experiments; and also a range of frames for proving melons, and raising seedlings. I am prepared to argue that every thing that the Society could reasonably wish to undertake, with a view to the progress of horticulture might be accomplished by these three ranges of glass, each about 300 ft. in length. All the glass and frames, with the requisite shade, &c. for this purpose, and a good deal more which might be disposed of, are already in the garden, and only require removal to this enclosed area, and rearrangement there. The brick walls already there I propose to be entirely taken down, the 850 ft. requisite to enclose the area in the centre built, and the remainder of the bricks sold, unless it might be thought advisable to build a gardener's house, and garden offices, &c., with a principal entrance, as indicated (m). I feel confident that there would be spare bricks to defray a part of the expense of the removal of the hot-houses and rearrangement of the walls; and I should recommend this work to be done by contract, by

responsible men. The diminution of expense by this arrangement is obvious, and to lessen the expense still farther, I would not commence forcing with hot dung, nor incur much expense in any way in the forcing-department for a year or two, till I saw how the Society was supported. If the Society were not well supported, the forcing-houses and pits might be abandoned, and the space used as an experimental kitchen-garden, and the proposed kitchen-garden turned into an orchard. The garden, in this case, would be supported by the sale of its orchard fruits. Even the arboretum might, as a last resource, be made an orchard. I would sell the greater part of the botanic exotics now in the stores of the Society, and only keep specimens of such as were likely to be required for experimenting on, with a view to additions to the edible fruits or succulent vegetables.

The peach trees and other trees on the walls I would cut round, and remove next autumn to both sides of the wall of the forcing-garden, and if there were not room enough for all of them, sell the rest.

I have to beg the Committee will now pass

Explanation of References to fig. 45.

The fruit and kitchen department (A) contains—
Eastern slip for herbs, perennial cucumbers, and strawberries, and border of east wall, A 1
Orchard, A 2
Southern slip for strawberries, gooseberries, currants, and raspberries, and borders of south wall, A 3
Kitchen-garden, A 4
Miscellaneous standard fruit compartment, A 5
Site for fruit glass, A 6
Pits and forcing ground, A 7
Garden for small fruits, A 8
Western slips for stocks, and fruit-wall border, A 9
Experimental garden, A 10
The ornamental department (B) contains—
Entrance to flower-garden, B 1
Flower-garden, B 2

Site for ornamental glass, B 3
Arboretum, B 4
Flower-garden, B 5
Experimental garden, B 6

The lodges, roads, and yards (C) are—
Entrance from London, and gardener's proposed ornamental lodge, C 1
Assistant secretary's proposed lodge, C 2
Space unoccupied at S.E. angle, C 3
Private road outside of the fence on the south, C 4
Kitchen-garden proposed lodge, C 5
Space unoccupied at S.W. angle, C 6
Yards for stables, sheds, composts, &c., C 7
Private road, to Turnham Green, C 8
Entrance by the National School from Turnham Green, C 9

a little, and imagine this plan executed, and then compare it in their mind's eye with the garden as actually existing. In my plan every part has such a definite use, that it could not be applied to any thing else without an obvious derangement; in the plan existing the objects and purposes are so mixed up, and so often repeated, that a great many parts may be said, using a common phrase, to be neither one thing nor another; without definite purpose, and without character. According to my plan, there would not be a repetition of any plant or tree throughout the whole garden; according to the present plan, the same sorts of fruit trees, ornamental shrubs, and flowers are many times repeated. According to my plan, there is no one part which may be described as common-place ornament; in the garden, as actually existing, there are numerous borders and patches of shrubs, as at the old entrance, at both ends of the flower-garden, and the borders and walks between hedges on two sides of the arboretum, which are nothing more than common-place shrubbery, of no use whatever. I repeat, that in my plan there will not be a single tree, bush, or plant, or walk, that could be dispensed with or transposed.

Should a square be preferred to the circular

We regret that our limits do not admit of our quoting various other portions of the evidence, which, to gardeners in general, as well as to Fellows of the Society, would be both instructive and amusing. The result of the whole, considered with reference to general principles, shows the little use of societies for the promotion of science in a reading age like the present; and the absurdity in all governments, from that of a few clerks and gardeners to that of a kingdom or a republic, of excessive legislation. Considered with reference to previous remarks on the Horticultural Society, which have appeared in this Magazine, the result proves the truth of what we have all along asserted to exist, viz. a narrow-minded system of management, the object of which was, in effect, not to advance gardening, but to aggrandise the Horticultural Society, and to ingratiate the honorary secretary with the higher classes of society. A part of the unhappy results of this narrow-minded system springs from the constitution of the Society, which requires or permits it to attempt doing those things which it ought only to have stimulated others to accomplish; which permits its affairs to be managed by an unpaid officer, and, in consequence, precludes the interference, except by etiquette, of any other member of the Society. A part, also, of this result has arisen from the personal character of that unpaid officer: ambitious, and yet without great views; zealous, sanguine, active, and jealous of his power. The impracticable plan of the Chiswick Garden; the system of concealment which prevented that plan from being known to the Fellows before it was executed, and, consequently, from being interfered with, and which has ended in the present enormous debt; the ridiculous rules and regulations of the garden, by which not a structure could be erected without being subjected to some of his alterations, nor a border dug, nor a common operation performed, without his written authority; and what is called the system of espionage, which Mr. Lindley has truly designated as monstrous*, may all be traced to these qualities of mind in the honorary secretary.

Had the President and Council of the Society been, of necessity, changed every two or three years, and the Secretary been a paid officer; had the minutes of councils of committees been open to the inspection of the members of the Society generally, errors might have been committed, but they would have been corrected, and the present state of things could never have arrived.

Some years ago we made repeated endeavours to obtain a knowledge of the number of members of the Council required to be present to constitute a council, and a list of those who had attended at each of the councils held in the course of any one year. Our correspondence on this subject is in existence, and can be produced. The result, after a great many letters had passed, turned out to be, that the Council had a right to refuse any thing and every thing, and that to us they did refuse every thing. The fact is, as one member lately observed to the Society, and for the truth of which, in a general way, we may appeal to Mr. Lindley, as under-secretary, it was utterly impossible for any one to acquire any information respecting the affairs of the Society who was not in the favour of Mr. Sabine.

Had the Gardener's Magazine not appeared, our belief is, that things would have been even worse than they now are; and, in addition to some thousands now due for printing and engraving the *Horticultural Transactions*, there would have been others due for the splendid 4to work on fruits, and the corresponding 4to work on plants flowered in the garden of the Society, of which prospectuses were circulated four years ago (*Gard. Mag.*, Vol. I. p. 88.); but which we remonstrated against, as interfering with works already in existence, and very well conducted. The object of the Society, about that time, appeared to be, to monopolise every thing connected with gardening or botany, from the placing of a journeyman gardener to the publishing of a new fruit or plant. Even a Gardener's Magazine was projected; and the assent of what is called the Council obtained to use the badge of the Society on the cover, in the manner in which the seal of the Royal Institution is used on the cover of *Brande's Journal*. The object of this Magazine was clear enough to all the world at the time, that of putting us down; in consequence of the

form for the area within the arboretum, I have little other objection to it, than that it requires a greater proportion of walk than a circle. Neither do I think a square so handsome, or so suitable for a public garden. The sketch of the plan now submitted, is calculated to effect the maximum quantity of objects, with the minimum extent of walks, walls, and glass, and without a single hedge. I have reflected on this plan since I first saw the Chiswick Garden, and with all the various details that are requisite to its complete development. I consider it not only very complete in its kind, but calculated to be more economically kept than any plan that I could devise for a piece of ground of similar extent and shape.

I think botanical travellers are unnecessary, and not within the legitimate objects of the Society; and that furnishing gentlemen with gardeners is calculated greatly to increase the business of the Society, without at all advancing the interests of horticulture. By adopting and carrying into every department of the Society the general principle of attempting nothing that could not be done by individuals, the business of the Society will be greatly simplified, and the objects for which it was instituted much more effectually attained.

* Mr. Bellenden Ker stated to the Society, at their Meeting yesterday (March 16.), that the whole of the present enquiry had resulted from a report of one of his conversations, whilst walking with Mrs. Ker in the garden, last summer. The report was so offensive to Mr. Sabine, that he proposed to the Council to expel Mr. Ker from the Society. Mr. Ker declared that the report was a tissue of falsehoods, got up, as he imagined, to please Mr. Sabine. In this way, Providence brings good out of evil. Every thing tends to a crisis, bad things the most rapidly.

different animadversions which appeared in our early Numbers on the Society, and especially on its garden. The first of these papers was by H. B. Ker, Esq., who, as the Committee have acknowledged, has led to the present investigation into the affairs of the Society: and it must be no small satisfaction to him, as it certainly is to us, to mark the present result of his labours.

The *Report of the Committee* may, on the whole, be considered very lenient on the subject of accounts and management, and perhaps in other matters it may be more correct than we are inclined to believe. We must confess, however, our entire want of faith in the assets of the Society being any thing like equal to its debts. The arrears stated at upwards of 6000*l.*, we should not value at above 800*l.* or 1000*l.*; and estimating all the items at what they would bring, if now sold, we do not believe there would be 10*s.* in the pound.

The great object of all observations on the past is, or should be, to render them available for the future. Whatever may be said in palliation of Mr. Sabine's conduct, nothing can be more clear than this, that he is the main cause of the present state of things in this Society; he it is, and he alone, who, by a system of concealment and monopoly of power, has brought the Society to the brink of ruin.

At the same time, while we express our opinion thus freely as to what are considered the bad points of Mr. Sabine's horticultural policy, we shall not withhold from him that justice which we should desire for ourselves under similar circumstances. Mr. Sabine has involved the Society in a debt which threatens its dissolution, but he has also been the cause of the greater part of the good done by the Society; and that the Society have done good, even we who are no friend to monopolies, or systems of exclusion in any way, readily allow. The springing up of so many horticultural societies throughout the country, and throughout Europe, has been mainly owing to the éclat of the London Horticultural Society, in consequence of the great accession of noble and even royal members since 1815, when Mr. Sabine undertook its management. The principal part of the *Transactions* of the Society have been published since that period, and they include a considerable number of good practical papers. We do not attach much importance to what has been brought from India or Africa: but certainly the Chrysanthemums, Chinese Primrose, *Wistaria Consequana*, and other hardy or half hardy articles from China; and the numerous Lupines, Pentstemons, and other hardy plants brought from North America, by Mr. Douglas; are invaluable additions to our gardens, and will probably continue to ornament them while this island endures as terra firma. All these objects of beauty and interest have been introduced under Mr. Sabine's auspices. Other services might be mentioned: but we shall only add that Mr. Sabine has been the means of bringing forward Mr. Lindley, who unquestionably is a man of extraordinary talent, and no less extraordinary industry; who has already done more for botany in this country, by proving in the London University that the natural system may be effectually taught to youth, than any one else has done in our time; and who, if he lives, and does not become over-elated with public applause, or, by his intercourse with the aristocracy, get into that sort of affliction which was the weak point of Sir Humphry Davy, will, in our opinion, be the greatest botanist that has appeared since the days of Jussieu. Mr. Lindley might possibly have eventually risen to eminence under whatever circumstances he might have been placed: but he has been upwards of ten years in the office of the Horticultural Society, and we will venture to say, that at the age at which he entered, with his previous education, and with the active friendship of Mr. Sabine, in no other office or situation whatever, in London or elsewhere, could he have enjoyed the same advantages, or advanced himself so rapidly as a man of the world, a man of science, and a gentleman.

The evil days which may be said to have fallen on Mr. Sabine, not merely as connected with Regent Street and Chiswick, but as an active member of the Zoological Society, are the result of his making these societies stepping stones to his intercourse with men of rank; and the lesson his fate has read to us will, we trust, not be lost, either on ourselves or on our professional readers. As society advances, men will be valued according to their worth as men, and not according to any factitious distinctions whatever. It is consolatory to think, and to believe, that every man's real character is sooner or later made known and appreciated by his fellow-men.

It is curious to reflect on what may be the consolations of Mr. Sabine under his present circumstances. Driven, like Adam, from the garden to the field — to the Zoological farm at Kingston — what will be his next pursuit? Having no wife or child, whither will he turn for consolation? But Nature, ever kind, has a provision for every thing; and there can be no doubt of this, that Mr. Sabine is supported by some feeling or other. Ignorance, or indifference, or vanity, or self-conceit, all bad of themselves, may prove a good to an individual, under particular circumstances.

What is now to be done? First ascertain who will really continue paying members. If as many remain as will produce 3000*l.* a year, go on; if only a smaller income can be obtained, break up, and begin another Society. If you go on, commit the affairs of the Society to an active, effective, paid officer, of whom none will be found equal to Mr. Lindley; let him be as much the President, Secretary, Council, and Garden Committee, as was Mr. Sabine; but let him not be quite so much the gardener, and by no means the accountant: let every act done by him, or letter or paper which passes through his hands, be rigidly scrutinised by the Council, or even open to every Fellow of the Society; there will always be some one on the look-out for faults; let it be made worth his while to rule well; let him then rule as he will (because no Council will ever take the trouble necessary for real effective management), *at the risk of dismissal* on conviction of misrule. Either this must be done, or you must have a paid council, as well as a paid secretary and accountant. This will eventually be found to be the true practical view of the case. After all this is done, supposing the Society to work well, the benefit to horticultural science will not be much. Most of the good which the Horticultural Society in this age or country is capable of doing has already been done.

March 16. — Some discussion took place on the Report, in which a vote of censure on the conduct of Mr. Sabine was proposed, but withdrawn at the earnest recommendation of Mr. Gordon, the Chairman of the Committee, as unnecessary, and likely to injure the interests of the Society with its creditors and the public in general. (See *Times* and *Chronicle* of March 17.)

ART. VI. Covent Garden Market.

<i>The Cabbage Tribe.</i>		From	To	<i>Pot and Sweet Herbs.</i>		From	To
		£ s. d.	£ s. d.			£ s. d.	£ s. d.
Cabbages, per dozen :				Parsley, per half sieve		0 2 0	0 3 6
Red		0 8 0	0 10 0	Tarragon, forced, per bunch		0 0 0	0 0 8
Plants, or Coleworts :		0 4 0	0 6 0	Fennel, per bunch		0 0 0	0 0 8
Savoy, per dozen		0 1 0	0 2 6	Thyme, per dozen bunches		0 4 0	0 0 0
German Greens or Kale,				Mint, forced, per bunch		0 0 0	0 0 10
per dozen		0 0 9	0 1 0	Peppermint, dry, per dozen			
Broccoli, per bunch :				bunches		0 1 0	0 0 0
White		0 6 0	0 12 0	Marjoram, dry, per doz. bun.		0 0 10	0 0 0
Green		0 1 6	0 3 6	Savory, dry, per dozen bun.		0 0 8	0 0 0
Purple		0 2 0	0 5 0	Basil, dry, per doz. bunches		0 2 0	0 0 0
Turnip Tops, per bushel		0 1 0	0 1 3	Rosemary, dry, p. doz. bun.		0 6 0	0 0 0
<i>Legumes.</i>				Lavender, dry, per doz. bun.		0 3 0	0 0 0
Kidneybeans (forced), per				Tansy, dry, per doz. bunches		0 1 0	0 0 0
hundred		0 3 6	0 5 0	<i>Stalks and Fruits for Tarts,</i>			
<i>Tubers and Roots.</i>				<i>Pickling, &c.</i>			
Potatoes	per ton	4 0 0	4 10 0	Rhubarb Stalks, forced, per			
	per cwt.	0 4 0	0 4 6	bundle		0 1 6	0 2 8
	per bush.	0 2 0	0 2 6	<i>Edible Fungi and Fuci.</i>			
Kidney, per bushel		0 2 6	0 3 0	Mushrooms, per pottle		0 2 0	0 3 8
Scotch, per bushel		0 2 0	0 2 6	Morels, dry, per pound		0 14 0	0 0 0
New, per pound		0 0 0	0 3 0	Truffles, per pound			
Jerusalem Artichokes, per				English		0 4 6	0 0 0
half sieve		0 1 0	0 1 6	Foreign, dry		0 14 0	0 0 0
Turnips, White, per bunch		0 0 2	0 0 3	<i>Fruits.</i>			
Carrots, old, per bunch		0 0 4	0 0 6	Apples, Dessert, per bushel		0 7 6	1 10 0
Parsneps, per dozen		0 0 6	0 1 0	Nonpareils		0 10 0	1 0 0
Red Beet, per dozen		0 0 9	0 1 6	Golden Pippins		0 7 0	0 9 0
Skirret, per bunch		0 1 0	0 1 6	Pearmain		0 6 0	0 8 0
Scorzonera, per bunch		0 1 6	0 2 6	Ribstone Pippins			
Radish, per bunch		0 1 6	0 2 0	Apples, Baking, per bushel			
Horseradish, per bundle		0 1 6	0 4 0	Baking		0 2 6	0 6 0
<i>The Spinach Tribe.</i>				Royals		0 4 6	0 6 0
Spinach	per sieve	0 2 0	0 3 0	Pears, Dessert, p. half sieve			
	per half sieve	0 1 3	0 1 6	Winter Swan's Eggs		0 3 6	0 5 0
Sorrel, per half sieve		0 2 6	0 3 0	Pears, Baking, per half sieve		0 3 6	0 4 0
<i>The Onion Tribe.</i>				Almonds, per peck		0 7 0	0 0 0
Onions :				Cranberries, per gallon		0 1 6	0 3 0
Old, per bushel		0 5 0	0 8 0	Strawberries, forced, per			
Pickling, per half sieve		0 3 6	0 5 0	ounce		0 3 6	0 4 0
Leeks, per dozen bunches		0 1 3	0 2 0	Walnuts, per bushel		0 8 0	0 0 0
Garlic, per pound		0 1 0	0 1 0	Chestnuts, French, per peck		0 4 0	0 10 0
Shallots, per pound		0 3 0	0 4 0	Filberts, English, per 100 lbs.		0 0 0	2 10 0
<i>Asparagus Plants,</i>				Pine-apples, per pound		0 5 0	0 12 0
<i>Salads, &c.</i>				Hot house Grapes, p. pound		0 0 0	2 2 0
Asparagus, per hundred		0 8 0	0 15 0	Spanish Nuts, per bushel		0 0 0	0 12 0
Sea-kale, per punnet		0 1 6	0 4 0	Barcelona Nuts		0 0 0	1 0 0
Lettuce, Cabbage, per score		0 0 6	0 1 0	Cucumbers, frame, per brace		0 14 0	1 4 0
Endive, per score		0 2 6	0 5 0	Oranges	per dozen	0 0 8	0 2 6
Celery, per bundle (12 to 15)		0 1 0	0 2 6		per hundred	0 3 0	0 14 0
Small Salads	per sieve	0 2 0	0 3 0	Bitter Oranges, per hundred		0 7 0	0 14 0
	per punnet	0 0 2	0 0 3	Lemons	per dozen	0 0 9	0 2 0
Watercress, per dozen small					per hundred	0 5 0	0 14 0
bunches		0 0 4	0 0 6	Sweet Almonds, per pound		0 2 9	0 4 0
				Brazil Nuts, per bushel		0 0 0	0 12 0

Observations. — The continuance of severe frost during the principal part of January and the early part of February, interrupted the supplies of vegetables generally; nevertheless, our market was generally well furnished with turnips, savoy, coleworts, carrots, &c., the prices of which remained tolerably steady, as per last quotations, until the change of weather in February produced a material difference in the quantities, and some alteration in prices; but the extreme rigour of the season, and more particularly the intermissions of frosty nights and warm days which prevailed in the latter end of February, have affected vegetables so much as to render our present supplies very limited for the season, and prices, consequently, rather higher than might be expected. This may also be the case for some time to come, as, from the same causes, no abundant quantities can be expected until May next. Broccoli are likely to be very deficient, and high in price, as they have been much injured by the frost; cauliflowers have been destroyed to a

considerable extent in the hand-glasses, and even under the lights of frames, as much from the impossibility of admitting air to them for so long a period during the prevalence of frost, as from the frost itself. Potatoes, during the severe weather, reached a higher price than quoted : indeed, the better sorts are now worth rather more than stated in the list, but as the supply of ordinary sorts is plentiful, I have not thought it safe to exceed the average. Onions have maintained their value throughout the season ; but, since the breaking up of the weather, a considerable quantity from Flanders has been imported, which has brought down our prices : at present, they are dull in sale. Shallots reach us in very small quantities, and from quarters whence none have hitherto been sent, in consequence of their very high price ; which is one of the many advantages of our very general interchange of communication. — *G. C. March 12. 1830.*

ART. VII. *Provincial Horticultural Societies.*

NORFOLK.

The Norfolk and Norwich Horticultural Society. — The prospectus of meetings and prizes of this Society for 1830 has been sent us, signed Elias Norgate, secretary, and accompanied by the following very judicious remarks by the same gentleman : —

In this their first list of prizes the Committee think it right to explain the general principles by which they propose to be guided in the selection of objects for the adjudication of them. This is the more necessary, because, in looking over the lists of prizes in various horticultural societies there does not always appear to have been made a sufficient discrimination between the result of chance and the result of skill.

1. It should ever be borne in mind that the merits for which a prize ought to be awarded exists not in the *production* but in the *producer*. The best dish of filberts in September, or of cherries in July, gathered, perhaps, from standard trees planted twenty years ago, can imply but slender merit in the individual who now exhibits them. In every horticultural production, therefore, whether raised for use, luxury, or beauty, the Committee will endeavour to estimate the merit of the exhibiter by the degree of science, care, and skill evinced in its cultivation.

2. In the cold and fickle climate of this county it is very desirable to encourage every attempt to forward the blossoming of flowers and the ripening of fruits before their natural season ; and equally so to retard them beyond it. A dish of green peas, gathered on the 1st of November, is as much a luxury as a dish that is gathered on the 1st of May. Prizes for extending the duration of flowers and fruits *at both ends of the season* will be richly earned.

3. The preservation of fruits and vegetables fresh through the winter, and late into the spring, is another object of importance. Not merely apples, peas, and potatoes, but many of the more delicate and perishable productions of our gardens may be so preserved. Although French beans and peas cannot be gathered in December or January, it is possible to preserve them in excellent condition for our tables to a still later period.

4. The judicious pruning, not merely of espaliers and wall trees, but likewise of the standard apple, pear, and plum trees of our orchards, is an object quite worthy of attention. At present these are usually left to themselves till their branches become so thickly interlaced, and their foliage so dense, that little or no fruit comes to perfection except that which has the good fortune to catch the outside sun. When the evil becomes at length very palpable and gross, a woodman climbs the tree with an axe or a saw in his hand, and lays about him, right and left, without discrimination and without mercy, till he has got two or three faggots of firewood. To this cause may be ascribed the great abundance of unripe fruit of all sorts which is brought to our markets. It would be difficult perhaps to adjudge specific prizes for the most judicious pruning, but the attention of cottagers may be directed to it with the greatest advantage.

5. The inuring of tender plants to our soil and climate ; the naturalising of exotics ; the obtaining of new varieties of fruits and flowers by fecundating the blossom of one with the farina from another ; experiments on grafting, budding, &c. These, and many other objects of attention to the gardener, will be objects of encouragement by the Society.

6. With respect to cottagers, while these will at all times be allowed to compete for any of the Society's prizes, no one but those of their own class will ever be allowed to compete for theirs. It is a great object to give them an interest in the culture of their little plots of ground : a taste for gardening once diffused among them, they will engage in competition with each other, and it is hoped they will bear away as many of such prizes as our funds may enable us to offer. But the stimulus to exertion must originate with their landlords : if this Society shall be the occasion of inducing the latter to attach a rood or two of ground to every cottage in their possession, its establishment will in some measure probably contribute to relieve the poor's rate of the county, and thus confer upon it an incalculable benefit. — *J. N. Nethersett, December 31. 1829.*

MONMOUTHSHIRE.

The Glamorgan and Monmouthshire Horticultural Society held their Meeting for the winter quarter on the 5th of January, 1830, in Cardiff. The Most Noble the Marquess of Bute, anxious for the success of this Society, has offered a piece of ground to form a garden, for which mark of encouragement the Meeting unanimously voted to His Lordship their warmest thanks. Prizes were awarded as follows : —

Flowers. Chrysanthemum, Mrs. Morgan, Landough. Wallflower, Mrs. Moggridge. Flower Camellia : 1. Hon. W. B. Grey ; 2. Mr. Reece. — *Fruit.* Grapes, Hon. W. B. Grey. Table Pears,

Mrs. Hill, Llandaff. Baking Pears, Mrs. Hill, Llandaff. Table Apples, Mrs. Head Deacon. Baking Apples, Hon. W. B. Grey. — *Culinary Vegetables*. Asparagus, Hon. W. B. Grey. Sea-kale, Hon. W. B. Grey. Broccoli, Mr. Moggridge. Celery, Mr. E. P. Richards. Parsneps, Mr. Moggridge. Onions, Mr. Thomas Minnett. Early Potatoes, forced (not offsets), Mr. Hill. Rhubarb, Rev. J. M. Traherne. Radishes, Mrs. Hill. — *Extra-Prizes*. Baking Apple, Mrs. Hill and Hon. W. B. Grey. Beet Root, Mr. Head Deacon. Broccoli, Hon. W. B. Grey. — *Cottage Prizes*. Apples, E. Williams, Llandaff. Onions, Thomas Perry, Cardiff. Basket of Vegetables, six sorts, D. Williams, Duffryn.

The grapes, sent by the Hon. W. B. Grey, retained the delicious flavour of an early autumn growth. A variety of the Newtown pippin, brought by Sir Charles Morgan, was of the amazing size of 13 in. in circumference, and weighed nearly 16 oz. The committee and gentlemen present were more particularly pleased with an extraordinary fine trace or rope of onions, called the Tripoli, the property of Colonel Morgan, of Landough Castle. This onion is not so well known as it ought to be: it attains a large size, is remarkable for its beautiful white colour and very mild flavour. (*The Cambrian*, Jan. 9. 1830.)

HEREFORDSHIRE.

Herefordshire Horticultural Society. — The *Hereford Florists' Register*, containing a brief account of the meetings of the Hereford Horticultural Society, by W. Godsall, acting secretary, Hereford, 18mo, has been sent us, and also the rules of the Society for 1829, and a schedule and "particulars" for prizes for that year. In the preface to the little book we observe, with pleasure, that five sovereigns will be awarded by the Society every fifth year "to the gardener of any member, for long servitude, general good conduct, attention to, and knowledge of, his business." With the warmest feelings towards this Society, from seeing among its members so many respectable names, so considerable a portion of ladies, and above all from greatly admiring the style of country about Hereford, Foxley, Moccas Court, the Holme, &c., at all which places we passed some time so long ago as 1806, we cannot help thinking that the practical gardeners have not had fair play. From the tables of the prizes given away for 1826, 1827, and 1828, it appears that scarcely any prizes are given to any one below the rank of esquire. In 1826, Sir J. G. Cotterell received 21 prizes; in 1827, 42; in 1828, 40; in all 103 prizes. Now the total number of prizes given away in these three years being 544 to 73 persons, surely one fifth to one individual, and he a patron of gardening rather than an amateur, is too much. No other individual appears to have obtained half so many. The name of the gardener of Sir J. G. Cotterell, as far as we can discover, is not in the book. A good many of the prizes are awarded to ladies, and this we are delighted to see, whether their gardeners are named or not. The cares of gardening are worthy of, and suitable for, ladies of every rank, from the cottage to the palace. There is nothing unfeminine in them, and as the resources for enjoyment of ladies residing in the country is limited compared with those of men under the same circumstances, we are happy to see that they avail themselves of such as are within their reach. We cannot, however, so easily enter into the idea of a country gentleman of property competing for prizes of fruits and flowers, when there are so many important duties and elevated recreations to which he is called upon to attend and might enjoy. Still less can we conceive what inward satisfaction it can be to a man to receive a prize for a production which, personally, he has had no hand whatever in producing. If prize shows of fruits and flowers are to be considered in the light of prize cock-fights or boxing-matches, and merely criticised like any other species of gambling amusement, that is another matter; and in that case we certainly greatly prefer gambling in fruits and flowers to any other species of gambling; but if, on the other hand, the object of Provincial Horticultural Societies be to improve the knowledge of gardeners in their art, and to disseminate improved gardening productions, then surely these objects will be best effected, or rather can only be effected, by raising the character of the practical gardener. The patrons of gardening are expected only to act as patrons, and not as operatives. Knowing nothing of Sir J. G. Cotterell personally, and not even the name or place of his estate, we trust no personal motive will be supposed to have occasioned these remarks. — *Cond.*

NORTHUMBERLAND AND DURHAM.

Botanical and Horticultural Society of Durham, Northumberland, and Newcastle upon Tyne. — The First Exhibition for this year of this Society was held on the 19th of February, when prizes were adjudged as follows: —

Dessert pears, a silver medal to Mr. Jos. Cook, gardener to Miss Simpson of Bradley Hall. A silver medal was also awarded to him for some beautiful and ingenious plans and models of a new method of forcing sea-kale and rhubarb, which seem admirably adapted for the purpose, and may be inspected by the subscribers at the Society's library in Dean Street. Asparagus, a silver medal to Mr. John Ward, gardener to C. J. Clavering, Esq., Axwell Park. Double hyacinth (Waterloo), a silver medal to Mr. Wm. Kelly, gardener to Armorer Donkin, Esq., Jesmond. Single hyacinth (Grand Vainqueur), a silver medal to Mr. Adam Hogg, at Mr. Falla's, Gateshead. Sea-kale, a bronze medal to Mr. Thomas Cook, gardener to T. W. Beaumont, Esq., M. P., Bywell Hall. Kidneybeans, a bronze medal to J. C. Lamb, Esq., Ryton. Bouquet of flowers, a silver medal; and Brussels sprouts, a bronze medal; to Mr. James Scott, gardener to Edward Charlton, Esq., Sandoe. Exotic plant in flower (double white *Camellia japonica*), a silver medal to Mr. Christopher Robson, gardener to Dr. Headlam, Jesmond Dene. Red gooseberry wine, a silver medal to Mr. Dunlop, Newcastle. This being the first time that any prize has been given for wines made from British fruits, there was a great deal of competition, and one bottle was exhibited of the extraordinary age of twenty-eight years, and made wholly without the addition of spirit of any kind. Collection of seedling apples, consisting of twelve different varieties, a silver medal to Mr. Michael Hall, of Beacon Lough, near Gateshead.

Among the gratuitous exhibitions were the following: — Grapes, consisting of Black Hamburg, Grizzly Frontignac, and White Sweet Water, from James G. Clarke, Esq., Fenham. Cauli-flowers, preserved through winter, from the garden of Mrs. Bewicke, of Close House. *Camellia Sasangua* fl. rosea, in full flower, and blanched striped Chicory, from E. Charlton, Esq., of Sandoe. Double red *Camellia japonica*, in full flower, from David Cram, Esq., Newcastle. *Sarracenia flava*, in full blow, from Mr. Falla, Gateshead. Apples of great beauty, and in fine preservation, called "Pomme de Gris," from Mr. T. Hedley, Newcastle, which had been sent to him from Montreal.

The large silver medal of the London Horticultural Society, which, at the Anniversary Meeting was awarded to Mr. Jos. Clarke, gardener to Mrs. Bewicke of Close House, was this day presented to him. (*Newcastle Courant*, Feb. 20.)

South Devon and East Cornwall Botanical and Horticultural Society. — A Meeting of the members and friends of the above Society was held on Feb. 4., when Dr. Hamilton addressed the Meeting as follows : —

"The advantages of horticultural establishments, such as we are this day met to organise, are too well known, and too universally admitted to need any aid from me to explain or to enforce them. But it is not to the improvement of fruits, or the cultivation of flowers — to the sweets of Flora, or the apples of Pomona — that your labours should be restricted : your views should take a bolder flight — your exertions embrace a wider field, a more extended sphere of public utility. The introduction of new objects of agricultural no less than horticultural industry, the diffusion of botanical as well as horticultural knowledge, and the amelioration of the condition of the poor, should be the leading objects of your attainment — the polar star to direct your course.

"How dissimilar soever the pursuits of the farm, and the lighter labours of the garden may, on a superficial glance, appear, their connection will be found, on a more careful scrutiny, closely interwoven, and intimately associated. Magnitude of operations, rather than any real diversity of character, constitutes the chief, if not the only, feature of distinction ; and the labours of the horticulturist may be regarded as bearing the same analogy to those of the agriculturist, that the experiments of the assay master do to the operations of the smelting-house.

"Neither is the study of botany foreign from, or unimportant to, the successful prosecution of horticulture, and its real advancement to the dignity of a science. The horticulturist who is unacquainted with the elementary principles of the system of Linnæus, or some other system of scientific arrangement, may acquire, indeed, an empirical knowledge of the usual appearance of those plants with which he is familiar, but he is destitute of the means of communicating his knowledge to others, and is totally at fault when any new plant, or unusual form of an old one, meets his view. To the physician no less than to the gardener, to the man of refinement no less than the herbalist, an acquaintance with botany is a source of endless gratification no less than of practical utility : it tends to enliven the most solitary rambles, peoples with wonders every hedge, and clothes in beauty the surface of the most barren rocks. But I must leave the vindication of botany in abler hands ; and assign to my learned and valuable friend, Mr. Banks, the pleasing task of practically demonstrating its utility. His Flora of this vicinity, announced for an early commencement, will demonstrate with more force and accuracy than any thing which I can advance, the applicability of botany to the ordinary purposes of life ; and the assistance which it affords to an investigation of the noxious, no less than the beneficial, properties of plants ; and his work will, I trust, be soon in the hands of all who hear me, and his labours rewarded with the encouragement they deserve.

"The amelioration of the lot, and the moral improvement of the poor, are objects whose importance must be too deeply impressed upon most of those whom I have the honour to address, to require much illustration from me. In every point of view, the garden must be admitted to be a more pure as well as more salubrious school of morality than the purlieus of the public-house ; and the diversified productions of bounteous Nature, springing into life and beauty from the bosom of the earth, infinitely more instructive and far less contaminating, companions than the noisy inmates of the gin-shop, or the drunken revellers of the tap. While the pursuits of the garden elevate the mind and purify the soul, invigorate the health and replenish the purse, the orgies of the alehouse have a diametrically opposite effect, degrading the mind, corrupting the heart, impairing the health, and impoverishing the purse. Hence, by promoting the innocent and salutary effects of gardening among their poorer tenantry ; by contributing, in the names of the most deserving, to the cottager's fund, and stimulating them to become competitors for the cottager's prizes, gentlemen will not only promote the welfare of their own tenantry, but, by awakening a taste for the innocent and healthful recreations of gardening among the neighbouring peasantry, reform their habits, elevate their morals, and improve their condition : teaching them to become independent of the soul-debasing, spirit-breaking aid of parochial charity, and thus relieve our parishes of one of their most oppressive burdens, the poor's rate.

"In the prospectus drawn up as a preparation for our present Meeting, and circulated to a wide extent, the utmost caution has been observed to shun a rock which threatens to prove fatal to the Horticultural Society of London, and will, I fear, injure our sister society at Exeter — the establishment of a garden for experimental purposes ; with the whole of the endless, and worse, I fear, than profitless, expenses such appendage necessarily demands. Besides the endless drain which it would prove to the funds of the Society, it would become a too fertile source of noxious jealousies and perpetual feuds, tending to the disorganisation of your body, and the frustration of your views ; while all the essential purposes of a garden can be obtained not only more cheaply, but also more effectually, and with infinitely more advantage to the public, through the exertions of private individuals stimulated to generous competition by the judicious allotment of prizes by your Committee ; as well as by the encouragement of essays on select subjects, and the diffusion of horticultural knowledge through the publication of the annual volume of your transactions, under the direction of your Committee.

"A library, judiciously selected and carefully superintended, appears to me an infinitely more efficient means of promoting the great end of public improvement than a garden ; while, by concentrating the disposable resources of the Society in the prosecution of one great object, a far greater effect will be produced than by dispersing them in the pursuit of many."

The Meeting ended in the regular organisation of the Society, of which Dr. Hamilton is provisional Secretary. (*Plymouth and Devonport Weekly Journal*, Feb. 11. 1830.)

ART. VIII. Obituary.

DIED, on Wednesday, Dec. 23., much regretted by all who knew him, and particularly by his numerous professional friends, Mr. John Gould, aged 46 years, 13 years Superintendent of the Royal Gardens, Windsor. He was a skilful horticulturist, and in the growth of the cucumber excelled by none, his system forming a new era in the early culture of that esculent. He was an enthusiastic florist, as the annals of the Windsor and neighbouring Florists' Societies will show, taking the first prize upon almost all occasions. To his zealous exertions may be attributed the establishment of the Windsor Horticultural Society. — *J. P. Burnard. Formosa Cottage, Holloway, Jan. 17. 1830.*

THE GARDENER'S MAGAZINE, JUNE, 1830.

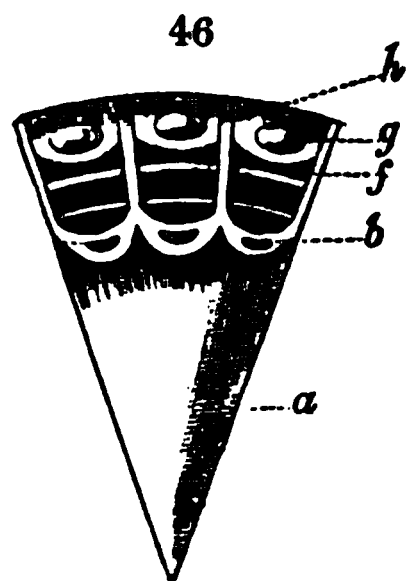
PART I. ORIGINAL CORRESPONDENCE.

ART. I. *On the Anatomy of the Vine.* By WALTER WILLIAM
CAPPER, Esq., Bath.

(Continued from p. 139.)

Sir,

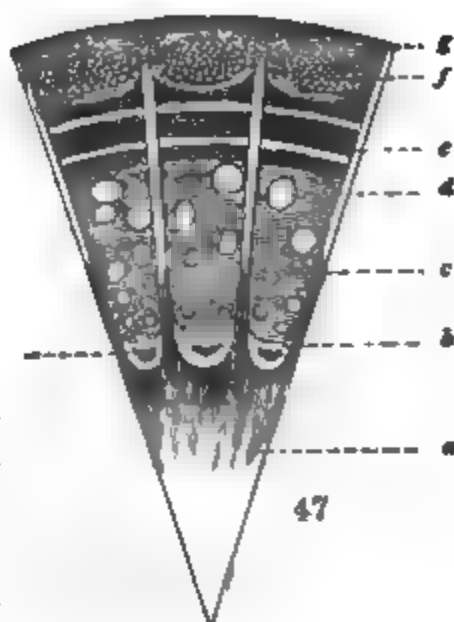
I now beg to present to your notice the gradual growth of the summer shoot of the vine. But I must previously state, that, amongst physiologists even in the present day, there are those who contend that the liber is converted, during the latter part of its growth into alburnum; this may be proved to be incorrect by the following simple experiments: — Separate from the vine the whole of a summer shoot, then cut through one of the smallest uppermost collets, with a clean sharp knife, the whole of the vessels will be found to be extremely delicate, and so blended together, that a powerful glass will render no assistance in discovering them; but apply to their surface the sulphate of iron, when the liber may be admitted to be present by the blackish precipitate. However, by referring to *fig. 46.*, it will give some assistance in concluding how the various vessels are arranged, from having discovered the liber, as in the following description of vessels, A, of *fig. 46.*



[A.]				
<i>a</i> , Medulla	-	-	-	-
<i>b</i> , Spiral vessels	-	-	-	-
<i>f</i> , Liber	-	-	-	-
<i>g</i> , Vascular texture	-	-	-	-
<i>h</i> , Cellular vessels and cuticle	-	-	-	-
<div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 10px;">}</div> <div>The primitive vessels of an extending spring shoot of a vine.</div> </div>				
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You may observe that no alburnum is represented in *fig. 46.*, nor any mentioned in the description of vessels A to be attached to the liber, for none can be produced until the leaves are tolerably well expanded.

Again, cut through the twelfth or still lower collet, when the vessels will be found more matured and more visible; the liber, when the sulphate of iron is placed upon it, will now show a much darker precipitate, part of the alburnum will be discovered, and the apertures of its ascending sap-vessels will be distinctly seen: by referring to *fig. 47.* the difference between this and the former figure (46.) may be easily distinguished, and also by the following description of vessels, B, of *fig. 47.*



[B.]			
a, Medulla	-	-	} The further advanced state of the vessels of a collet, of a summer's shoot of a vine.
b, Spiral vessels	'	-	
c, Concentric layer	-	-	
d, Ascending sap-vessels	-	-	
e, Liber	-	-	
f, Vascular texture	-	-	
g, Cellular vessels and cuticle	-	-	

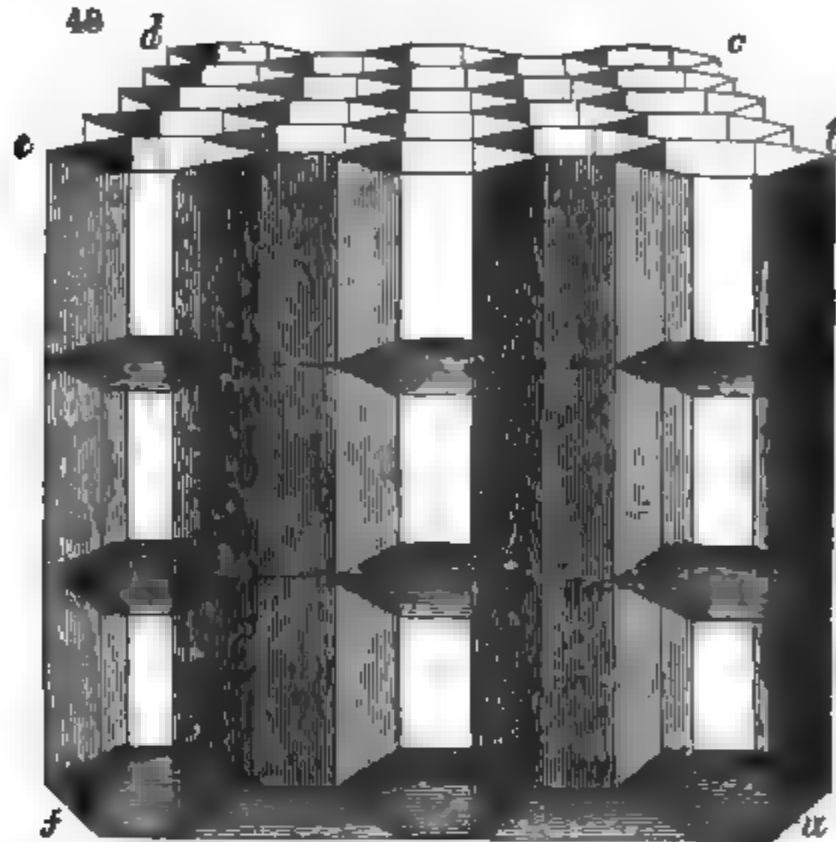
The extended leaves are now capable of exerting their full powers, not only on the fluid furnished them by the spiral vessels, but also upon the sap which they derive from the roots by the ascending sap-vessels, which latter undergoes certain chemical changes, and perhaps the other also, by imbibing the atmospheric air, which oxygenates it, by the influence of the rays of the sun; and these fluids afterwards descend by the liber and the vascular vessels; and a gradual increase of alburnum is produced, but principally by the vessels of the liber.

Repeat a similar experiment on some of the lower collets of the shoot, when the vessels will be still more apparent, and a greater increase of alburnum will be seen. I consider these simple experiments to be very satisfactory: they are not only conclusive, as to the gradual growth of the alburnum in the summer shoot of the vine, but that no part of it is converted liber, as the liber is still in its original state; these experiments are the more pleasing, as they require so short a time to establish two such evident facts.

The cellular texture I shall now endeavour to describe: its vessels are of the utmost importance to every plant; in short,

some of them consist entirely of cellular vessels. In the vine their outward appearances are so different in some parts, that I am induced to separate them into two divisions, to facilitate their description; such as those of the medulla I shall call *extended cellular vessels*, and such as unite the divisions of the collets, the *close cellular vessels*. The first are generally soft and perishable; the latter are as durable as the woody divisions which they unite in the vine, oak, &c.

I beg to refer you to *fig. 48.*; the whole of the vessels there represented at *a b c d e f* are extended cellular; such ves-

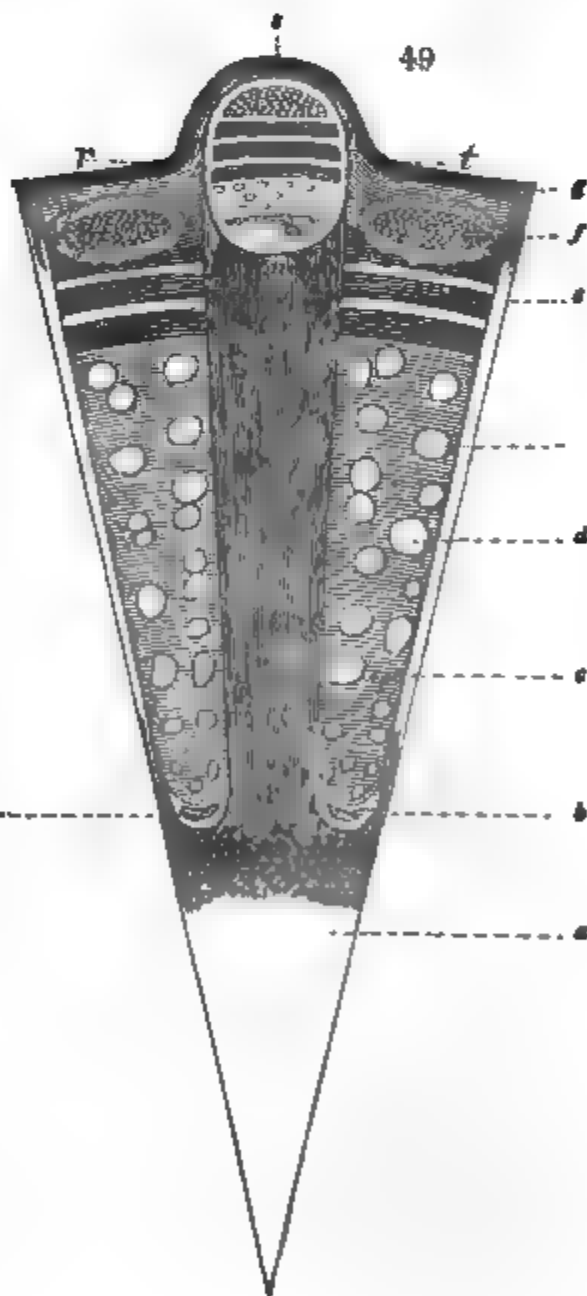


sels surround the bundles of vascular texture at *f*, in *fig. 51.*, and they also join the cuticle; they are hexagonally shaped, like the cells of the honey-bee. The same vessels also extend between the divisions of the liber, and between those of the alburnum, as in *fig. 51.* at *x, y*: but in the latter situation they lose the extended hexagonal shape and become flattened, and appear as close cellular vessels; round the points of the divisions, which extend into the medulla, they become again the extended cellular vessels. It is not only the change of the outward appearances of these vessels, which is extraordinary, but that they should also contain certain different fluids. To prove which, apply to the surface of a horizontal slice of a collet the spirituous tincture of iodine: after it has remained there a little time, the close cellular vessels between the alburnum and round the points of the divisions, with some part of the medulla, will show a black precipitate; this is the iodate

of starch, which indicates that the iodine has precipitated the farinaceous fluid contained in those vessels: but the extended cellular vessels round the bundles of vascular texture in the bark will be very little discoloured, which shows that the latter have very little farinaceous fluid within them; but they contain the gallic acid, as the sulphate of iron has formerly proved. It is certainly very interesting to discover how this fluid changes its qualities, while passing along the same description of vessels in different parts of the vine. For instance, in the extended cellular vessels round the bundles in the bark, it consisted partly of gallic acid and farina in a state of solution, as was indicated by the two tests of the sulphate of iron and the tincture of iodine; but in the close cellular vessels, between the alburnum and round the points of the divisions, and also in the extended cellular vessels of the medulla, it consisted of the farinaceous fluid without any gallic acid.

The cellular texture has several very beneficial properties, such as healing every internal wound and filling up every vacancy, as may be seen in *fig. 23.* in p. 130. of this volume: the tenth bundle of vascular texture is there represented considerably enlarged a little below the joint, from having received some injury, but it is healed by the growth of some of the cellular vessels filling up the fracture with living fibres.

For further illustration of the healing powers of these vessels, I must beg your cutting through one of the lower joints of a summer shoot, in a horizontal direction, a little below the part where the claws protrude, at which place you will perceive distinctly six smooth places, consisting of close cellular



vessels, lying between the medulla and the vessels extending into the claws: this white substance consists of close cellular vessels; it is formed expressly to fill up the vacancies, that would otherwise take place, when the spiral vessels, ascending sap-vessels, the liber, and the vascular vessels are drawn outwards from the medulla, during the growth of the other divisions of the joint, which are on each side of it. Perhaps by referring to *figs.* 46. and 49. it will further assist what I am anxious to explain.

Fig. 46. represents the liber *f* closely connected in its early state of formation to the medulla sheath, in which are the spiral vessels *b*.

Fig. 49. *r t* are two common divisions, as before described, one on each side of the division *v u s*. *u* represents the vessels of a claw, being those of a division, and they are partly protruded beyond the divisions of the joint; *v u* the close cellular vessels, which fill up the space between the two divisions of *r* and *t*, and unite them firmly together throughout their whole length, which otherwise would have been left a vacant space.

Although it is very difficult to distinguish the vessels of a claw, when so closely connected together, as they are supposed to be in so small a space, yet I have made an ideal representation of them in the figure (49.), between *u* and *s*. Those nearest to *u* are the spiral vessels; the small holes, the ascending sap-vessels; the five bars, the liber; the hexagonal-shaped, the vascular vessels.

On the former cutting you will have observed a bar at the joint quite across the medulla; in its early state it consisted of extended cellular vessels, and they had at that time a free communication with the medulla of the collets, both above and below; but afterwards these vessels become more compact, and then consist entirely of close cellular vessels; part of the bar extends to the base of the bud, forming an excellent fulcrum for the extending shoot of such bud to issue from next spring. Had the joint been deficient of this bar, to unite the two sides of the shoot together, they might split asunder; as the upper part of one is frequently suspended by a tendril, as in *fig.* 53. at *m*, when the lower side has attached to it a long shoot loaded with one or two heavy bunches of grapes. Even in this tendril it is delightful to follow nature: for it is composed of permanent materials, similar to the collets; and as the shoot becomes heavier, the ligneous parts of it become larger and stronger.

The silver grain in the oak, as it is commonly called, is nothing but the close cellular texture, lying between its divisions: the fact may be proved, by removing the outward

smooth grain from any oak board ; or it may be produced, by planing away the concentric layer, keeping all the time an attentive eye upon the outside edges of the cellular texture, as a guide to regulate how much is to be removed : when a broadish surface of cellular texture is produced, any device of birds or beasts may be drawn upon it ; afterwards cut away the extra-quantity, which exceeds the figures of your design, and form a smooth surface of concentric layer a little lower than the former.

The vessels of many seeds contain the close cellular, as wheat, beans, peas, &c. ; and these may be dried so much as to become as hard as box-wood. Roots, in general, contain the extended cellular vessels, as potatoes, carrots, turnips, &c. ; but these are all perishable.

Two pleasing experiments may be performed upon the bean and potato, by placing them in a solution of the prussiate of potash. Cut them through the middle when the root of the former and the eyes of the latter are a very little elongated, and apply to their surface the sulphate of iron ; when they will both exhibit, with the assistance of the microscope, the contours or framework of their cellular vessels, by the blue precipitate forming a most beautiful ramification between the cells : although the cells themselves will not exhibit any precipitate, because they have not admitted internally any of the prussiate of potash ; for they are full of the former summer's secreted juice, laid up within them, to nourish their embryo or extending shoots during their infantine state.

The potato affords a further gratifying experiment. Cut one unprepared, through the middle ; dry its surface a little with blotting paper, then apply to it the spirituous tincture of iodine, when a black precipitate will be immediately produced ; this is the iodate of starch, because the iodine has united with the farinaceous liquid from the cells of the vessels. Slightly raise with the point of a fine needle one of the entire cells, afterwards puncture it with the point, which will discharge a clear liquor, but it will be immediately precipitated by the iodine into which it flows. If you leave some small pieces of the potato cut asunder for a few days, the fluid in their cells will be found to be opaque, which shows that they ceased to retain their vital principle. These extended cellular vessels are again pleasingly exhibited by examining those of a boiled potato, when every one will readily separate and appear like a grain of white sand.

It is frequently desirable to examine the cellular vessels of the potato, turnip, apple, &c., but which it is difficult to do, from their transparency and extreme minuteness. The following method I should recommend ; it will take but a minute

to perform, when they will be conspicuously seen : — Cut the surface of one quite smooth, then pass over part of it a brush containing very little of the solution of the prussiate of potash, then with silver blotting paper make it somewhat drier; likewise pass another brush, with very little of the sulphate of iron upon it, very quickly over where the first had been, when the edges of the cellular texture will be distinctly seen by the blue precipitate upon them. This operation I call typing, as the edges of the vessels will be seen standing up, similar to letters placed ready for printing.

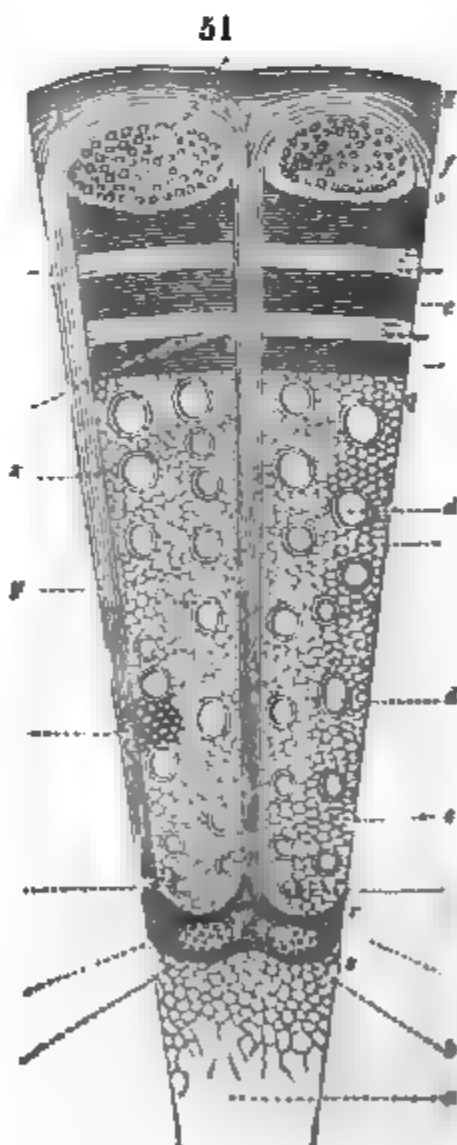
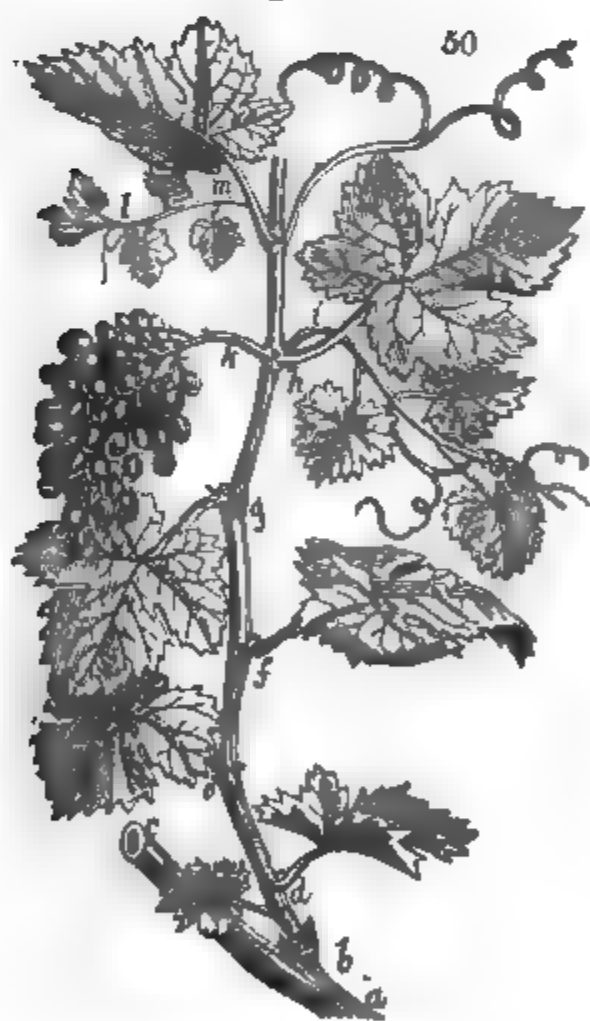
I am inclined to think the cellular vessels are the primitive formed vessels of vegetation, and that all others, except the spiral and ascending sap vessels, are only a modification of them. The vessels of the liber are somewhat similar to them in appearance, and I am almost certain that the cellular vessels of the bark and those of the liber have a free communication with each other; but I have no hesitation in saying that the fluid of the cellular vessels under the cuticle passes freely by their contours or framework of their cells in either direction; and I beg to refer you to *fig. 48.* to assist in a further explanation of them. We will suppose at *d* that some of the vessels have been partially exhausted of their fluids, which will cause those of *a b c e f* to supply such deficiency; but should a considerable quantity be required, then the greater supply will be taken by those vessels from their cells. Had this exhaustion taken place at *a*, then the fluid would have retrograded, and *b c d e f* would have supplied the deficiency.

A great deal of very valuable information might be acquired by an accurate examination of the vessels of a potato; for I feel confident a considerable proportion of those brought to market are deficient of a proper quantity of farinaceous fluid in their cells, which is the essential ingredient for the support of man. Every farmer well knows that the wheat in the ear first goes into the watery state, and afterwards into the milky state, but none of them would ever think of cutting such grain until this milky fluid became well hardened. Yet many acres of potatoes, from being planted late, are dug up, when their cells contain but little farinaceous fluid; nor can they possess it until the plant itself is in a perfect state of maturity, and this can only be acquired by early planting, which brings to perfection the whole economy of the plant.

Having described the alburnum, the liber, the ascending sap and cellular vessels, I ought now to proceed with the spiral and horizontal vessels, the cuticle, and those of the leaf: but this would prevent my presenting to your notice, and that of other scientific persons, some very interesting changes that take place in the bark of the vine, about the first week in

August. Therefore, permit me to digress, and represent them to your and their attention previously to that period, that my observations may in part be confirmed by what will then appear; or that I may have the benefit of being corrected by your and their better judgment.

These periodical changes in the vine I have watched for several years: at first, I must acknowledge, they extremely surprised me, so much so, that, had they been communicated to me, I should have had my doubts excited respecting the validity of such information. That I may be prepared to convince others of what I should have doubted myself, I have selected your June Number to represent them in, which will give every one interested in the subject sufficient time to examine the vines previously to the first week in August, when such changes generally take place on those growing on south walls in this neighbourhood, but in colder situations I have found them to take place later, even in the third week in August, and I think it would not be earlier in the northern counties of England.

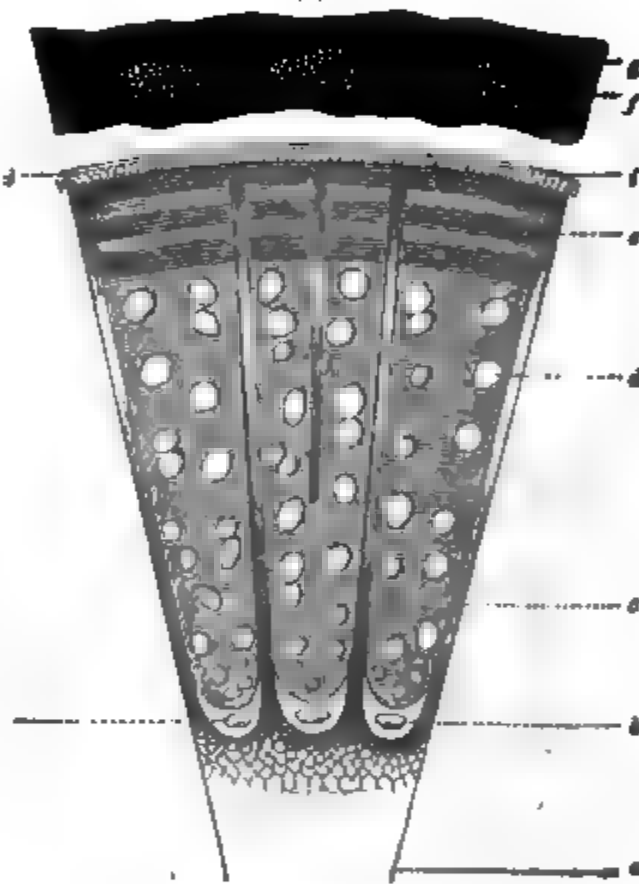


On the 10th of July, 1829. — We will suppose part of the summer's shoot of the vine to have grown similar to *fig. 50.*

and to be in full vigour; and that a thin horizontal slice taken from one of its collets would be similar to *fig. 51.*, and the several vessels of it would be as in the following description of vessels, C, of *fig. 51.*

[C.]			
a, Medulla	-	-	These vessels of the divisions were in full vigour on the 10th of July, 1829.
b, Spiral vessels	-	-	
c, Concentric layer	-	-	
d, Ascending sap-vessels	-	-	
e, Liber	-	-	
f, Bundles of vascular texture	-	-	
g, Cellular vessels and cuticle	-	-	

On the 7th of August, 1829.—About this time an alteration would have taken place in the vessels of the shoot of *fig. 50.*; its cuticle, cellular and vascular texture, would have lost their accustomed vigour, and would be separated from the liber, leaving a space between them, which would be filled up immediately with close cellular texture. *Fig. 52.* gives a representation of such changes, and of the vessels in actual vigour, as in the following description of vessels, D, of *fig. 27.*

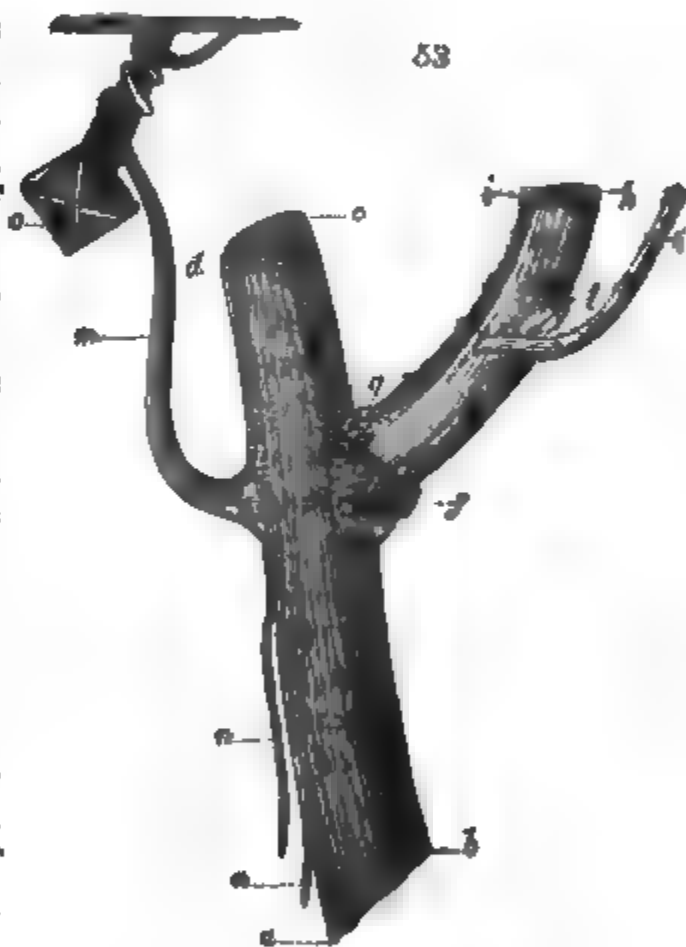


[D.]			
a, Medulla	-	-	These vessels of the divisions continued in full vigour on the 7th of August, 1829.
b, Spiral vessels	-	-	
c, Concentric layer	-	-	
d, Ascending sap-vessels	-	-	
e, Liber	-	-	
i, New close cellular vessels or covering	-	-	These vessels of the divisions ceased to be in vigour about 7th of August, 1829.
f, Vascular texture	-	-	
g, Cellular texture and cuticle	-	-	

So that the vascular texture, the cellular texture, and the cuticle ceased to contribute to the direct support of the vine after the 7th of August, 1829, although they continued to cover the remaining animated vessels of the bark. In *figs. 46, 47, 49.* the liber has been represented gradually enlarging, consisting of the two ligneous and the three fleshy bars. Although

the alburnum has regularly increased in size, no additional bars have been added to the liber, nor will any change take place in it during the first summer; for the liber *e* was retained on the 7th of August, 1829, in the description of vessels *D*.

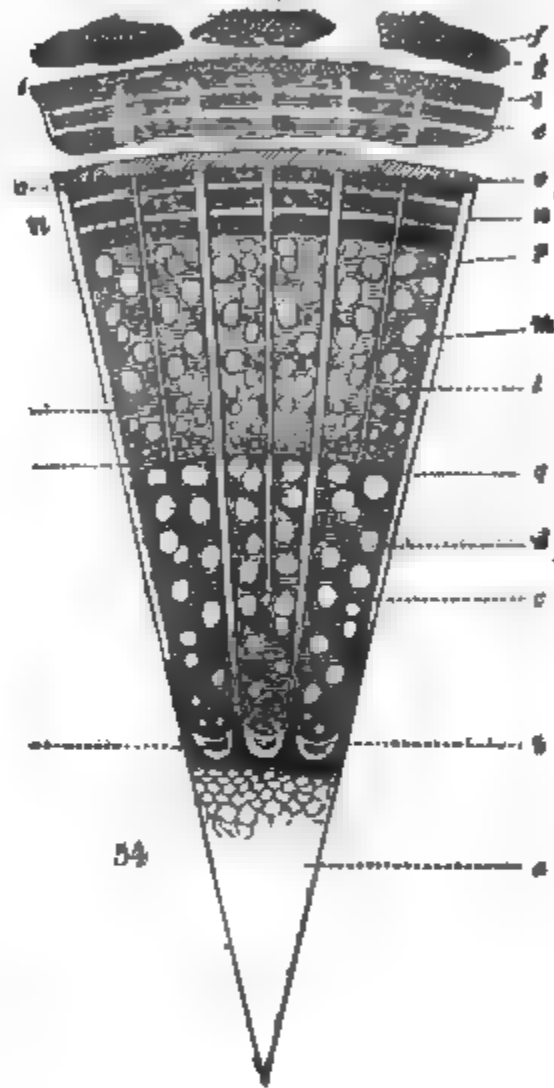
During April, 1830. — The shoot of the year before, as in *fig. 50.*, will at this time commence opening its winter cradle leaves, and the young shoots will elongate themselves. The liber of the largest divisions now generally divides into two, but the liber of the smaller does not: the spaces that would have been left between them are immediately filled up by the ever-healing hand of the close cellular texture. When the liber was at the point of *k*, *fig. 52.*, it must there have divided, and the first part of the close cellular ray must have immediately commenced. Surely it is erroneous to give such formed cellular vessels the name of medulla rays, when so few of them can possibly diverge from the medulla, and it frequently happens, as it has done in the above-recited instance, as at *k*, in *fig. 52.*, that they have no direct communication with the medulla, and this is the case with many others; therefore I think I am justified in continuing to call them the cellular rays, instead of either divergent or medulla rays.



On the 10th of July, 1830. — Part of our last year's shoot (*fig. 50.*), will now appear like *fig. 53.*, and upon it will be seen part of the present summer's shoot (*f h i g*), the vessels of which are in every respect similar to those as described on the 10th of July, 1829, *C*; these will therefore require no further explanation, but to refer to the description of the vessels *C* and to *fig. 51.* *a b c d* of *fig. 53.* is that part of the vine which the gardeners call the shoot of 1829, although it is partly the growth of this year, as well as of the preceding; when I have occasion to refer to it, I shall apply the same term. The vessels of a division of a collet (*a b c d*, *fig. 53.*)

are at this time exactly the same as they were described in D on the 7th of August, 1829; for no change has since taken place: but, in consequence of the increased diameter of the vine during the summer, the vascular and cellular texture and cuticle have separated from the vine in many places, and their ragged appearance is represented at *n n* in *fig. 53*.

About the 7th of August, 1830. — You will find still more remarkable changes take place at that time upon the shoot of 1829, marked *a b c d* in *fig. 53*.; for the liber will be then pushed outwards, and a new liber formed in its place, adhering to the present year's alburnum as closely as the old liber did a few days before. Upon this new liber you will find a covering of close cellular texture, exactly the same as was described on the first year's liber, on the 7th of August, 1829, marked *i i* in *fig. 52*. in the description of vessels called D. To prove it, cut a horizontal slice of a collet from a vine similar to *a b c d* in *fig. 53*., when you will be surprised to find what a number of vessels will be suspended of their animation, and how few will afterwards carry on the vital functions in that part of the vine. I have also added the time when such vessels ceased to support the vine, and the period of the formation of those that do, in the following description of vessels, E, of *fig. 54*.



[E.]			
<i>a</i> , Medulla	-	Autumn, 1829	About the 7th of August, 1830, the whole of the vessels of last year may be considered no longer directly to support the vine.
<i>b</i> , Spiral vessels	-	— 1829	
<i>c</i> , Concentric layer	-	— 1830	
<i>d</i> , Ascending sap-vessels	-	— 1830	
<i>e</i> , Liber	-	August, 1830	
<i>f</i> , Vascular texture	-	— 1829	
<i>g</i> , Cellular texture and cuticle	-	— 1829	
<i>h</i> , Close cellular vessels	-	— 1830	About the 7th August, 1830, these few vessels now support the vine.
<i>i</i> , New concentric layer from <i>q</i> to <i>p</i>	-	1830	
<i>m</i> , Ascending sap-vessels	-	— 1830	
<i>n</i> , New liber	-	August, 1830	
<i>o</i> , Close cellular vessels or covering	-	— 1830	

These few vessels (*l m n o*) with the addition of the cellular rays which unite the collets, are the whole which support the vine from the 7th of August, or thereabouts, after its second year's growth; and only similar vessels to them, which are annually formed, ever after support it as an entire tree.

The liber and its cellular vessels are the sole covering that the vine has during the winter, except its former year's liber, which may be considered as very precarious covering. Some may reflect on nature for not having sufficiently protected the vine during severe winters, as the vineyards of France and Germany are sometimes injured, when the apple and pear trees do not suffer. But they ought to recollect that where the vine was first found, the climate was temperate and suitable to its constituent parts: but nature formed the apple and pear trees for our northern and severe winters, by suffering them to retain their liber for years, not only as a covering, but completely animated; for the cuticle of their branches of 2 in. diameter, or even larger, ought to appear as smooth as a person's hand, otherwise you may expect small fruit, the apples sour and the pears gritty; but these defects may be easily remedied by care and attention, and a moderately good soil.

About the 7th of August, 1830.—The following experiment will further confirm what I have said respecting these changes that take place both in the shoots of 1829 and 1830. Split down the middle part of a vine similar to *fig. 53.*, which will divide *a b c d*, and also *f g h i* lengthwise; let the knife pass across the letter *h* to *i*, and also cutting through at the same time *c* to *d*, and let it pass down the middle of the whole, and come out at *a* to *b* at the bottom; make smooth that part of the two halves at *f*, and at that place carefully raise up the following vessels, which you will find loose, from their having lost their animation at this time, as will be represented in the following description of vessels, F, of *figs. 52, 53, 54.*

[F.]

On the shoot <i>f h i g</i> of 1830 -	$\left\{ \begin{array}{l} f, \text{ Vascular vessels of 1830} \\ g, \text{ Cellular vessels and cuticle} \end{array} \right.$	$\left. \begin{array}{l} \text{These vessels will come} \\ \text{off together if care-} \\ \text{fully removed.} \end{array} \right\}$
On the shoot <i>a b c d</i> of 1829 -	$\left\{ \begin{array}{l} e, \text{ Liber of 1829} \\ i, \text{ Close cellular vessels} \\ f, \text{ Vascular vessels} \\ g, \text{ Cellular vessels and cuticle} \end{array} \right.$	

From the liber of 1829, and the vascular texture of 1830, losing their animation during the same week, I am induced to believe that the vascular vessels of 1830 arise from the liber of 1829 in the spring of 1830; and that they afterwards convey downwards from the leaves part of their secreting juices or descending sap, by these bundles of vascular vessels, to the

liber; for I cannot conceive what other purpose they can answer: they cannot be a continuation of the former year's vessels, for they were perfectly dead in the spring, when these vascular vessels were first elongated with the shoot; besides they are never found in any other part of the vine, but in the summer shoot, and they die at the same time as the liber of the year before. At one time I thought these bundles of vascular texture might be to supply the cellular vessels of the summer shoot, as they are embedded in them, with the descending sap from the leaves; but this idea was relinquished, when I afterwards found that the new cellular vessels of the same year, as represented in *fig. 52.* at *i* to *i*, had no communication with them, nor those of *o* to *o* in *fig. 54.* in the following year.

Connected with this change, that takes place about the 7th of August, 1830, is the union of the liber of the two shoots of 1829 and 1830 in *fig. 53.* at *e*: for both will be completely united, and there will be no scar observable; although the liber across *f* to *g* was formed in the spring of 1830, and the new liber on the shoot of 1829 at *e* will be formed in August, 1830.

One might have supposed that the liber of 1830 might have elongated its vessels downwards, as it had extended them upwards during the summer, and, by so doing, formed the new liber on the shoot of 1829; but that cannot be the case, when we recollect that the new liber on the shoot of 1829, as represented in *fig. 54.* at *n* to *n*, will be formed in a week.

Presuming that the shoots of 1829 and 1830 will confirm the changes which I have mentioned, in the first week in August, 1830, I must appeal to you, and other scientific persons, to assist me in explaining the direct use of the bundles of vascular texture, and to point out whence they do arise, and also from what vessels the second year's liber is formed.

During my endeavours to discover the second year's liber, I have always paid more attention to the cellular vessels than to any other, from observing how soon they filled up the space left by the detached vessels from the liber of 1828, and also the space that was left when that liber was thrust out in the following August of last year; and I think, if they do not entirely form it, they contribute essentially towards it.

I remain Sir, yours, &c.

Bath, April 15. 1830

WALTER WILLIAM CAPPER.

PART II.

REVIEWS.

ART. I. *A Botanical, Historical, and Practical Treatise on the Tobacco Plant, in which the Art of growing and curing Tobacco in the British Isles is made familiar to every Capacity, as deduced from the Observations of the Author in the United States of America, and his Practice in Field Cultivation in Ireland.* By Thomas Brodigan, Esq. London. 8vo. 7s.

This work affords what may be considered a very fair specimen of provincial book-compiling. The author sets to work without being aware of what books, English, French, or German, have already been written on the subject. He speaks of Carver's *Treatise* as being the only one he has heard of; but even that he could not get, though he "had it searched for through all the booksellers, and old book repositories, of the Irish metropolis." (p. 128.) He contents himself, therefore, with borrowing, at second-hand, from our Encyclopædias, and from the *Encyclopædia Britannica*. Had he told his Dublin agent to look into Watts's *Bibliotheca*, under the art. *Tobacco*, he would at least have made himself acquainted with the titles of books on the subject; and, among no inconsiderable number, he would have found *A Historical Essay* by Tatham, 8vo, 1800, now before us, which would have elucidated many points of which he seems to know very little. What surprises us most, however, is, that Mr. Brodigan should have grown tobacco on a considerable scale in Ireland, without even knowing the name of the species or variety he cultivated. Surely, one or other of the curators of the Dublin botanic gardens could have supplied his book-searcher there with this information. The same curators would also, we have no doubt, have lent him a modern edition of Miller's *Dictionary*, and saved him the trouble of copying nine species without specific names, but with the definitions in use before the time of Linnæus. It is difficult to conceive how any man of the slightest pretensions to literature could be ignorant that such a mode of describing species has been out of use for a century. If he had looked into Martin's edition of Miller's *Dictionary*, 1807, he would have found something very different to quote under his head of botanical classification and character; or why not content himself with copying that given in Rees's *Cyclopædia*? The book has one valuable part, however, and that is the account of the author's experience in Ireland; the substance of this we shall communicate.

Tobacco was introduced into the county of Cork, with the potato, by Sir Walter Raleigh; but the culture of the former does not appear to have made much progress, though, according to Humboldt, it preceded that of the potato, in Europe, more than 120 years, having been extensively cultivated in Portugal at the time that Sir Walter Raleigh brought it from Virginia to England, in 1586. A writer in 1725, quoted by Brodigan, says, "I have not heard that a rood of tobacco was ever planted in this kingdom." An act of George III. repealed several preceding acts that prohibited the growth and produce of tobacco in Ireland, and this is the foundation on which Ireland now rests her claim to that branch of culture. Until the

year 1828, Brodigan observes, the culture was limited; but, in that year, there were 120 acres under tobacco; and, in 1829, 1000 acres in Wexford alone. "It has been partially cultivated in the adjoining counties of Carlow, Waterford, and Kilkenny, and other places. In the province of Connaught, an experiment was made in the vicinity of Westport. It has been grown, in one or two instances, near Dublin; in the northern section of the kingdom, two or three trials have taken place on a small scale;" and our author has cultivated several acres in the neighbourhood of Drogheda, preparing the soil by horse-labour, as for turnips.

The culture of tobacco in Ireland, as practised by Mr. Brodigan, is thus given:—"Hot-beds, like those made for cucumbers, are to be prepared in March, and the seeds sown any time from the 15th of that month to the 1st of April. In the beginning of May, the plants may be hardened by exposure to the air; and, by the 15th or 20th of that month, they may be transplanted into the open field without injury. Forty thousand plants, fit for transplanting, may be raised on an area of 100 square feet. According to Carver, a square yard will rear about 500 plants, and allow proper space for their nurture till they are fit for transplanting. The field was prepared in every respect the same as for turnips; the drills or ridgelets were 18 in. apart, and the manure, of which a good supply was given, buried in the centre of each ridgelet. The plants were put in with spades, at 18 in. apart, along the centre of the ridgelet, and afterwards watered. "The planters were followed by women, with their aprons full of long grass, with which they covered each plant, and confined it by placing a stone or lump of earth at both ends; this covering is indispensable, unless the weather prove wet and cloudy. Such is the extreme delicacy of the plant, it will not bear the heat of the sun, unless it has so far set in the soil as to be able to supply the loss by evaporation. This will not be for some days, during which time the cover cannot be safely removed, and watering to the extent of a pint a plant may be daily used. Some of the respectable planters in the county of Wexford have used pots as a covering for the plants, of which some thousands will be necessary. Others have used large oyster-shells, leaves of cabbages or docks. I have tried all these methods, and experience has satisfied me the mode I practised has decided advantages. It protects the plants sufficiently against the sun, and the water passes freely through it; whereas, where pots or leaves are used, they must be removed to admit water; and, in case of rain, the plants receive little or no benefit from it. The operation of planting may be continued until the 20th of June; but the earlier the better, after the frosts have passed away. In America and France, I found that four months were generally considered as necessary for the maturation of the plants; and that time, in this climate, cannot be allowed, unless they are put down early." (p. 160.)

The Summer Management of Tobacco, by Mr. Brodigan, consisted in loosening the soil about the plants, removing the weeds, watering "for weeks together," taking off the decayed leaves at bottom, topping when the plant has from 9 to 14 good leaves, and removing the side buds as they appear.

The curing Process, by Mr. Brodigan, is as follows:—"About the middle of August, the plants having attained their full size, four or five of the bottom leaves of each plant are taken off, suffered to lie on the ground for some time, and, when they lose their brittleness, and can be safely handled, they are carried home to a barn, and there put in a heap for fermentation. The heap is turned, placing that in the centre which was before in the bottom or exterior, and the temperature not allowed to exceed 100° or 110°. After remaining two or three days in this heap, the leaves are spread out and cooled, and strung by the midrib on lines of packthread; they are then hung up in an airy shady place, roofed in. When the leaves thus suspended have acquired an auburn colour, they are fit for a second

fermentation. A quantity of hay must be placed between the tobacco and the ground, and the heap may be made of an oblong or conic figure, the ends of the stems being placed inwards. The heap being made, it is to be surrounded with hay, blankets, or other close covering. The period for this fermentation will depend upon the state of the weather, and the dryness and size of the leaves. In four or five days, I generally found the heat was sufficiently high to penetrate and reduce the stems; and when that is accomplished, the heap is to be cooled by spreading it out to dry. In reducing very strong tobacco, I found it necessary to permit the heat to ascend to 126° . In 60 hours, I found the heat had attained 110° ; and, in 72 hours, 126° ; but the general range of the second fermentation was from 120° to 125° Fahrenheit. In some cases I had to resort to a third fermentation of the same tobacco, but the heat did not rise beyond 90° . Upon this important point of fermentation, or sweating the tobacco, I have given the result of my practice. For greater accuracy, and the benefit of the inexperienced, I have given it from a thermometer; but, at the same time, the hand and feeling of a practised overseer can direct the process. As soon as the tobacco has been perfectly dried, by exposure to the sun and the weather, it is still necessary to dry any remaining moisture in the midribs, for which purpose they must be packed so as to be outside, that the air may have its influence upon them. When they are perfectly dry and hard, the tobacco may be considered as fit for use, although it will possess more or less of crudeness, until the month of March following. To correct this crudity, or any acrimony that may exist, different preparations are used in different countries. In Brazil, the leaves are steeped in a decoction of tobacco and gum copal. In Virginia, I understand, they sprinkle the tobacco, in the packing process, with diluted rum and molasses; and, in Ireland, they sprinkle, in the packing process, with a decoction of the green tobacco stems, or a decoction of hay, with a small portion of molasses: the effect of this innocent application is to soften and improve the flavour, darken the colour of the tobacco, and render it, in appearance, a more merchantable commodity. The next and last operation is, to tie the leaves in hands, and pack them in bales or portable packages." (p. 166.)

Improvements in the curing Process. — Some of Mr. Brodigan's tobacco, he informs us, only wanted age to be as good as Virginia. Tobacco improves by a sea voyage, as it undergoes a certain degree of fermentation in the hogsheads in the spring or summer months. Drying-houses, heated by flues or steam, as now erected in America, he thinks, would be an improvement in Ireland. Captain Basil Hall visited a tobacco plantation on James's River, and found the house, in which the *hands* were hung up, with fires of wood made upon the earthen floor. The flavour of the wood burnt in this way, Mr. Brodigan states, is now strongly perceptible in the tobacco of late years imported from America.

As *suggestions* derived from considering what we have read and observed on the subject of cultivating and curing tobacco, we submit the following:— When a farmer, who thoroughly understands and successfully practises the Northumberland mode of cultivating turnips, intends growing tobacco as a field crop, we would recommend him to prepare the soil exactly as for Swedish turnips, give a double dose of well rotted manure, mix the seed with fifty times its bulk of sand or bone-dust, and sow with Common's turnip drill, usually called French's, about the middle of May. When the plants come up, they may be thinned out as turnips are, to 16 or 18 in. apart, and topped in the beginning of August. The rest of the process may be conducted as by Brodigan, drying, however, in a barn or house heated by an iron stove. A cottager or spade-cultivator may find it worth his while to sow in a hot-bed or in a flower-pot, and transplant; he may dry his leaves the first time under the eaves of his cottage, and the second time in his garret; or, if the quantity is small for home use, in his kitchen. For

his tobacco liquor, or sauce, he may grow a score or two of poppy plants, collect the opium from them, and mix this with whisky, or spirit of any kind, in which abundance of peach leaves, or a few leaves of *Laúrus nobilis*, or one or two of the common laurel, have been infused, adding water and salt as directed above. A gardener, where there are hot-houses and hot-house sheds, may dry and ferment in them; and, indeed, with such opportunities, and seeds of *N. repándum*, he ought to grow better tobacco than any person whatever, not in Virginia or the West Indies.

The produce, in America, is from 1000 to 1500 lbs. per acre; in the county of Wexford, 1200 lbs.; and in Meath, Mr. Brodigan has had at the rate of 1680 lbs. per English acre. In Virginia, the leaves of four plants, each occupying a square yard, give a pound of tobacco. The money-cost of production in Ireland, Mr. Brodigan estimates at 18*l.* per acre, where the land is prepared by horse-labour; and 30*l.* where it is prepared by manual labour. The produce, at 16*l.* 8*s.* per hogshead of 1350 lbs., barely pays the expense of horse-labour.

The value of tobacco, as an agricultural crop, is much diminished from the circumstance of its producing no manure. The farmers of Virginia, as Jefferson predicted, have now ascertained that it is better to raise wheat, at 1 dollar per bushel, than tobacco at 8 dollars per cwt. As a source of labour, Mr. Brodigan thinks the culture of tobacco a desirable employment for the rural population of Ireland. Its great advantage is, that it affords employment for those intervals when the labouring poor are at present destitute of occupation. "The cultivation of a potato crop is of vital importance to the Irish peasant; but, as soon as that crop is planted, there is a long interval of idleness and distress. The stock of potatoes is then generally exhausted, or unfit for use, and the summer months are the most pinching times with the poor. The planting of tobacco may be said to commence when the other is finished, and the field management occupies the interval until the corn harvest. Again, between the corn harvest and the taking up of the potatoes there is another interval of idleness, and that is occupied in the curing of the tobacco." (p. 178.) As a cleaning crop, and a preparation for wheat, the tobacco must be about equal to the potato. The nourishment it abstracts from the soil must also be of the same general nature, since both plants belong to the same natural order, *Solàneæ*.

The great and laudable object of Mr. Brodigan is to induce government to permit the cultivation of tobacco in Ireland, at a moderate duty; and we hope he will attain his end. The restrictive system will probably, at no distant time, be removed from tobacco and from every other crop: but that tobacco ever will enter into the general course of crops of the British farmer we do not think likely; because, when trade in this, as in every thing else, is once made free, the tobacco of warmer climates will unquestionably be preferred to that of the British Isles. At present, there are a number of gentlemen in the House of Commons who use tobacco; but, should its use become unfashionable among the higher classes, we should not be surprised to see an attempt made to lay such a tax on the foreign commodity as would give the landed interest a monopoly of an inferior article, which would thus be forced by the rich on the poor. This would only be the operation of the same principle which produced the removal of the beer tax, in order to raise the price of barley, and please the poor at the same time. We trust, however, to the growing political sense of the country, to the force of opinion, in short, to the press, to avert such an evil. In the mean time, we ardently desire to see the culture of tobacco permitted, and successfully attempted, in Ireland, in order to aid in employing the population of that country; and we should wish, also, to see every cottager in the three kingdoms growing his half rod, which the law permits, and which, at a moderate calculation, ought to produce 4 lbs. of tobacco for his own smoking or snuff, or for selling to his neighbours.

The manufacture of tobacco we have slightly described in the *Encyclopædia of Plants*. We have since had an opportunity of witnessing the progress of all the different operations carried on in preparing shag and other kinds of smoking tobacco, pigtail and other chewing tobacco, various snuffs, and different kinds of cigars, in one of the most extensive manufactories in London; and the conviction on our mind is, that very little in the way of manufacturing can be attempted by the gardener or cottager. That little we shall shortly describe.

The tobacco, being properly fermented and cured, may be kept closely pressed and excluded from air, in casks, till wanted; or, when the curing process is completed, smoking-tobacco and snuff may be made from it as follows:—Open out the leaves singly, and from each tear out the midrib. The midribs are better adapted for rasping into snuff than for cutting into shag for smoking; and being scented by any essence, such as that of thyme, anise, lemon, or more especially by that of the root of *Iris florentina*, the orris root of the druggists, may be tied up in what are called carrots, or rolls, about 18 or 20 in. long, 2 or 3 in. in diameter in the middle, and half an inch at each end. They are tied with packthread drawn as tight as possible, and the threads quite close, so as to compress the tobacco into one solid substance, and completely to exclude the air. When snuff is wanted, unroll a part of the packthread at one end, and rasp the tobacco into snuff with a file or grater. The carrot may then be laid in a dry place till wanted for a fresh supply. The soft parts of the leaves may be treated in the same manner, and a snuff produced which some prefer to the other. Gardeners may dry leaves of any odoriferous plant, such as thyme, mint, *Aloysia citriodora*, &c., and tie them up in the tobacco carrot as substitutes for liquid scents; and, if thought necessary, they may add a leaf or two of *Veratrum album* to add pungency. For cottagers, there are agrimony, wild thyme, and various other plants, which may be added.

The soft part of the leaves, from which the midribs have been removed, may be slightly sprinkled with water, without any admixture whatever, and twisted into a rope, about the thickness of a common straw rope. The rope may then be coiled up in a ball, as firmly and compactly as possible, tied round in two or three places with packthread, wrapped in paper, and placed in a dry place, excluded from the air, till wanted for use. When to be used for smoking, cut off a few inches of the rope, open it out, and cut it into shreds with a knife or chopper, so that it may resemble shag tobacco. If it is to be made into snuff, open out the leaves, dry them over the fire or in an oven, and pound them in a mortar, adding to the powder any scented water, or volatile odoriferous oil, at pleasure. If more snuff is made than is wanted for immediate use, put it in a glass bottle, and cork it closely. The Scotch and Irish snuffs are, for the most part, made from the midribs; the Strasburgh, French, Spanish, and Russian snuffs from the soft parts of the leaves.

The process of forming cigars is very simple; but, as it cannot be done well without much practice, it would be of little use to offer a description. Whoever wishes to make himself master of all that is known on the culture of tobacco in different parts of the world, and all the different modes of its manufacture, may consult *Cours d'Agriculture Complet*, Paris, 8vo, edit. 1823, art. Tabac; *Carver's Treatise*, London, 8vo, 1779; *Tatham's Essay*, London, 8vo, 1800; *The Experienced Bremen Cigar-Maker, or fundamental and practical Instructions for making Twenty-five Sorts of Cigars according to the latest experience*, Chemnitz, Kretschmar, 1824, 8vo; *Schmidt's Tobacco Culture of the French and Dutch combined, with the Mode of preparing the Plant for Use*, Dresden, 8vo, 1824, Arndt.

ART. II. Catalogue of Works on Gardening, Agriculture, Botany, Rural Architecture, &c., published since January last, with some Account of those considered the most interesting.

BRITAIN.

Curtis's Botanical Magazine, or Flower-Garden displayed; New Series.
 Edited by Dr. Hooker. In 8vo Numbers, monthly. 3s. 6d. col.; 3s. plain.

No. XXXVII. for January, contains

2956 to 2962. — *Neóttia*? (*neottia*, a bird's nest; roots of some of the species) *grandiflora*; *Orchideæ*. "The orchideous plants, formerly scarcely known in a state of cultivation, may now rank with the most numerous, and certainly the most curious and beautiful, of any tribes which adorn our stoves; and among those not parasitic, whose roots are embedded in the ground, may assuredly be reckoned the kind now before us, which was sent to our Glasgow garden, by the Rev. Lansdown Guilding, and blossomed in the stove in the spring of 1829." — *Habenària longicaúda*; *Orchideæ*. From specimens sent from Demerara; the specific name, long-tailed, refers to a filiform process, which proceeds from the petals, and is more than a span long. Living plants are not yet introduced. — *Monárda menthæfòlia*. Raised in the Edinburgh botanic garden, and in the garden of Mr. Neill of Cannonmills, from seeds collected by Mr. Drummond in Canada. Lilac flowers in August. — *Saxífraga leucanthemifòlia*. — *Desmòdium* (*desmos*, a chain; articulated seed-vessels) *dùbium*; *Leguminòsæ*. A pretty greenhouse suffruticose plant, with lilac flowers in June, from the Himalaya mountains. — *Anthocércis viscòsa*; *Solànææ*. A low shrub from New Holland, with white campanulate flowers in May. Green-house. — *Begònia picta*. — The present number seems to conclude a volume; for, though there is neither a *Finis*, nor any explanation on the cover, there is a leaf on which is printed the following dedication: — "To Joseph Sabine, Esq. F.H.S. L.S., &c. &c., the able and disinterested secretary of the Horticultural Society of London, who has laboured with the most unwearied zeal, both there, and in his private capacity, for the advancement of botany and horticulture, the present volume is inscribed, in testimony of his unfeigned regard and esteem, by the author."

No. XXXVIII. for February, contains

2963 to 2969. — *Cýcas revolùta*. Flowered last summer at Wentworth House. Thrives at Madeira, in a spot 300 ft. above the level of the sea. "The Japanese, of whose country the plant is a native, eat the fruits; and from the trunk extract a kind of sago, which is highly esteemed, especially by the people of rank. On this account, the plant is much cultivated about their houses, and is forbidden to be exported. A very small quantity of the medulla or pith suffices to satisfy the hunger of a soldier in the time of war." — *Sisyrínchium pedunculàtum*. From Chile; raised in Mr. Neill's garden at Canonmills, where it flowered in June, 1828. — *Begònia diversifòlia*. — *Passiflòra ligulàris*. From Peru, and flowered in the Glasgow botanic garden in September and October, 1829. The leaves are large, ovate, and acuminate; flower not very showy. — *Cérbera Tánghin*; *Apo-cýnææ*. A Madagascar tree, which produces a hard veined wood, fit for cabinet-work and inlaying, and a fruit, the kernel of which is rather larger than an almond, and so powerful a poison that one kernel would destroy above twenty persons. In Madagascar this poison is used as an ordeal; and the priests, who at the same time are the physicians, administer it to the victims, not doubting its power of revealing guilt or clearing innocence. — *Hedýchium acuminàtum*.

No. XXXIX. for March, contains

2970 to 2975.—*Cócculus palmatus*; *Diœ'cia Hexándria*, and *Menispérmeæ*. A medicinal plant, known as Columbo in the materia medica, the natural history of which has hitherto been little known. It grows naturally in thick forests on the east coast of Africa; the roots are dug up in the dry season (March), and soon afterwards cut in slices, and strung on cords, and dried in the shade. They are held in high esteem among the natives, for the cure of dysentery, the healing of ulcers, and as a remedy for almost every disorder. Some of the roots have been imported to the Mauritius by Captain Owen, and Professor Bojer is trying to propagate them by cuttings of the stem, as they are found to increase very slowly by offsets from, or division of, the root. Should he succeed, the culture of Columbo root may become an object of general industry in the Mauritius. As a medicine, this root has been long known and esteemed, both in the East Indies and in Europe, where it is found to be of singular efficacy in strengthening the fibres of the stomach and bowels, not only in chronic cases, but in the cholera morbus, dysentery, and diseases of the alimentary canal. Its analysis, according to M. Planche, afforded a third of its weight of woody tissue, a third of amylaceous matter, and the remaining third is principally composed of animal substance and a yellow and bitter matter insoluble in metallic salts. "The presence of so large a quantity of amylaceous substance accounts for the great reputation of the root in dysentery, diarrhœas, and excessive vomiting. By a decoction of Columbo the fecula is extracted, as well as the bitter principle, whose action is thus considerably modified, whilst an infusion is simply bitter and tonic." — *Dryas Drummóndii*; *Rosæcæ*. A beautiful species discovered by Dr. Richardson in the woody country of North America, between latitude 54° and 64°. "It has been Dr. Richardson's wish that it should bear the name of the indefatigable and meritorious assistant-naturalist of the expedition, Mr. Thomas Drummond. Seeds were brought over to this country, which have vegetated, and the plants are flourishing in several gardens, though they have not yet blossomed." — *Prímula mistassínica*. Nearly allied to *P. farinósa* and *P. scótica*. Inhabits North America from Canada to the arctic circles. — *Céstrum bracteatum*. A stove shrub, probably from Brazil, received by Dr. Graham of the Edinburgh botanic garden, from the Berlin garden. — *Verónica alpina* var. *Wormskiöldæ*

No. XL. for April, contains

2976 to 2982.—*Bignónia Telfairiæ* (in honour of Mrs. Telfair). A densely leafy tree with beautiful, bell-shaped, rose-coloured flowers from Madagascar. The plant not yet introduced. — *Gília púngens*; *Polemoniæcæ*. A curious hardy annual from North-west America, by Mr. Douglas, to the Horticultural Society. — *Gongóra víridi-purpúrea*; *Orchídeæ*. Gathered in the woods above Botafogo Bay, Brazil, by H. Harrison, Esq., and sent to his sister, Mrs. A. Harrison of Aigburgh, near Liverpool. — *Polemónium pulchérimum*. A "desirable" perennial, from the Rocky Mountains in North America, by Mr. Drummond. — *Epidéndrum pallidiflorum*. An orchideous epiphyte, sent by the Rev. Lansdown Guilding to the Glasgow botanic garden, whence is not stated. — *Lantána Selloviána* (Mr. Sellow, a Prussian botanist); *Verbenæcæ*. A pretty species, from Monte Video, to M. Otto of Berlin, in 1822, and thence to the Glasgow botanic garden, in 1829. — *Potentílla nívea* var. *macrophýlla*. Raised in the Glasgow botanic garden, from seeds brought from the Rocky Mountains by Mr. Drummond.

No. XLI. for May, contains

2983 to 2989.—*Amarýllis aúlica* var. *platypétala glaucophýlla*. "So well marked, and so beautiful, as almost to merit the rank of a species." From Rio to the Aigburgh garden, near Liverpool. — *Potentílla grácilis*. A handsome strong-growing perennial, from the banks of the Columbia in

N. America, by Mr. Douglas. Yellow flowers in July. — *Eutoca Franklinii*; *Hydrophylleæ*. An annual, with blue flowers, not unlike the common Greek valerian, from the banks of the Mississippi, by Dr. Richardson, during the first over-land arctic expedition. June. — *Crœcus aureus*. *Pothos crassinervia*; *Aröideæ*. An epiphyte from Demerara, with very large foliage. — *Crœpis macrorrhiza*; *Comp. Cichoracææ*. From the perpendicular faces of dry sunny rocks in the valleys of Madeira, by the Rev. R. T. Lowe, B.A., to the Glasgow botanic garden, where it produced its yellow flowers in June. — *Conostylis aculeata*; *Hæmodoracææ*. A curious perennial, from the southern shores of New Holland, by Mr. Fraser of Sydney, to the botanic gardens of Edinburgh and Glasgow.

Edwards's Botanical Register. Continued by John Lindley, F.R.S. L.S. &c. Professor of Botany in the London University. In 8vo Numbers, monthly. 4s. coloured.

No. XI. for January, contains

1292 to 1298. — *Lepechinia* (Lepechin, a Russian botanist) *spicata*; *Labiatae* § *Nepeteæ*. A Mexican annual weed. — *Leucoryne* (*leukos*, white, and *korynē*, a club; club-like sterile stamens) *odorata*; *Asphodèleæ*. A pretty little plant, from the sides of mountains between St. Jago and Valparaíso, in places where the snow had been a few days melted. Found by Mr. M' Rae, and brought by him, along with other species, to the Horticultural Society in 1826. — *Zinnia violacea* var. *coccinea*; *Compositæ* § *Helianthææ*. A splendid annual plant, which came up among some Mexican seeds presented to the Horticultural Society by J. S. Milne, Esq. "Such is the brilliancy of the scarlet, that no mixture of the most vivid colour will match it by many degrees." Propagated by seeds, and also freely by cuttings taken off when the stems have just become woody. — *Pentstemon attenuatus*; *Scrophularinææ*. "One of the hardiest of its handsome genus, growing from 1½ to 2 ft. high, and freely in any kind of garden mould: propagated readily by division of its spreading roots. It flowers from July to the end of September. The species is chiefly remarkable for the deep green of the leaves, and the delicate cream-colour of the flowers." — *Jasminum acuminatum*. From the banks of the Hastings River, New South Wales; green-house; cuttings; and white flowers in November. — *Crinum latifolium*. A rare species from the Earl of Caernarvon's collection at Highclere. — *Pleurothallis* (*pleuron*, a side or rib, *thallō*, to flower; one-sided disposition of the flowers of some species, or probably the developement of the inflorescence from what appears to be the rib of the leaves) *prolifera* (from the leaves constantly producing young rooting plants from their axillæ); *Orchideæ*. A curious plant from a steep rock, which the sun could hardly shine upon, near Rio Janeiro. With the Hon. and Rev. W. Herbert, at Spofforth, it flowers six or seven months in the year. "It is remarkable for the proliferous character of its leaves. These constantly produce young rooting plants from their axillæ; and, what is singular, the first leaf of each new individual is produced from the same side of the axis of the mother plant as the old leaf from which it sprang. This apparent exception to the universal laws under which leaves are developed is due to the abortion of the first leaf that is developed, which appears in the form of a withered scale, while the second leaf is that which is finally and fully developed."

No. XII. for February, contains

1299 to 1305. — *Dendrobium chrysanthum*; *Orchideæ*. A beautiful species from Nepal to the Horticultural Society's garden, where it blossomed in February, 1829. "It is difficult to conceive a plant at once more graceful and beautiful than this: its pendulous stems, which hang from the rugged, deep-brown, moss-clad trunks of trees, are clothed with lurid leaves of the most lively green; and its flowers are of the richest and deepest yellow. At first

sight, the species might be mistaken for *D. fimbriatum*, but it will be found very different upon comparison.

Most cultivators of stove orchideous plants find a difficulty in managing the particular tribe to which this belongs : that difficulty is, however, completely overcome in the garden of the Horticultural Society, in which these flourish more than almost any others. In that establishment they are treated thus : — They are planted in perfectly rotten wood, in small pots, which are covered with moss tied securely about them ; these pots are suspended *obliquely* from the rafters of the front part of a small stove, in such a way that the plants are not compelled to grow upright, but are allowed to assume the pendulous or horizontal position which is natural to them. Thus treated, species of the true *Dendrobium* habit, such as *D. chrysanthum*, flourish in a degree which is, at least, equal to that of their native woods. The temperature of such a stove should never fall below 75° ; and the dew point should be always near saturation."

Phlomis floccosa. From Egypt to Boyton, where it flowered last November, but is not likely to prove hardy. — *Bignonia Cherère*. From the conservatory of Lord Grenville at Dropmore. It is a native of French Guiana, where the country people "manufacture the flexible shoots of it and *B. incarnata* into baskets and broad-brimmed hats, which act as umbrellas, keeping off both the sun and the rain ; they also use the shoots as cord. A conservatory climber, preeminently beautiful among the lovely race to which it belongs. Propagated readily by cuttings, and requires no particular management beyond that of giving it plenty of room to run." — *Heuchera micrantha* ; *Saxifragæ*. From Colombia, and in general habit resembling *H. americana*. — *Polemonium cæruleum* var. *piliferum*. A hairy variety of the common Greek valerian ; raised in the garden of the Horticultural Society, from seeds collected in the last arctic expedition. — *P. humile*. From the same source. A perennial 1½ ft. high, requiring a poor gravelly soil, but not dry. — *Cotoneaster laxiflora* ; *Pomaceæ*. A hardy shrub, of uncertain origin, with small flowers tinged with red in April.

No. I. of Vol. III. for March, contains

1306 to 1312. — *Málva Munroana*. From the barren plains of the Columbia, by Mr. Douglas. A hardy perennial, flowering from May to October, with vermilion-coloured roundish petals, and small gooseberry-like leaves. It does not thrive in rich soil or peat earth, and suffers much from rain. A coarse gravelly soil, among shaded rockwork, would probably suit it better. Mr. Douglas, the discoverer, named this species in compliment to Mr. Munroe, head gardener to the Horticultural Society. — *Clerodendron hastatum*. A very handsome, rapid-growing, stove shrub from Hindustan. It produces elegant, white, fragrant flowers ; and its deep green halbert-shaped leaves are often stained with dark purple. Cuttings. — *Blackwellia padiflora* ; *Homalínæ*. A hardy green-house shrub, growing well in the open border during the summer ; very handsome when in flower, and increasing freely by cuttings. The blossoms, in a mass, have the appearance of those of the bird-cherry : examined singly, they resemble nothing so much as an elaborately finished shuttlecock. — *Pentstemon venustus*. " Found by Mr. Douglas in the dry channels of rivers among the mountains of North-west America. It increases freely either by seed or cuttings ; but is less handsome than *P. diffusus* or *ovatus*. To be grown in perfection, it should be treated as a biennial. It is apt to become unsightly when old. It is extremely important to those who are in possession of seed of the rare pentstemons, to know that this seed cannot be raised in heat, it is indispensable that it should be sown in a cold frame, or all endeavours to raise it will prove fruitless." — *Cassia biflora*. " A native of the West Indies, whence it was long since introduced to our gardens. In this country it, like most other species of this beautiful genus, has been neglected, in

consequence of the necessity of keeping it in a pot, in a stove or greenhouse, a situation in which it does not thrive; but, planted in the open ground of a conservatory, or even in the open border, in such countries as the south of France, where the summer temperature is sufficiently high, this and many others become the chief ornaments of a garden." — *Cánna lagunénsis*. Raised by Mr. Lambert from seed received from Laguna in Mexico. "Upon this high authority we publish it, not professing ourselves to understand the limits or peculiarities of the species of this very difficult and intricate genus. It appears to be principally distinguished from other yellow-flowered kinds by the spots upon the inner limb of the corolla, that which is rolled back being entire, by the very broad membranous bractæ, and by the abruptly acuminate apex of the leaves. Being a native of Mexico, it will undoubtedly succeed well in a common conservatory or greenhouse, of which it would be a striking ornament." — *Cleòme speciosíssima*; *Capparídeæ*. A tender annual, requiring much the same treatment as *C. ròsea*, to which it bears much general resemblance.

It gives us much satisfaction to observe, that the learned editor of this work has at last adopted all our different suggestions respecting the accentuation of names, indications of the derivations of names, and the literal translation of specific terms; the *Botanical Register* has now, therefore, our unqualified approbation, and we shall lose no opportunity of saying so. Our next wish is to see the *Botanical Magazine*, and Mr. Sweet in his various works, follow the example of Professor Lindley.

No. II. for April, contains

1313 to 1319. — *Calceolària Herbertiàna*. One of the most ornamental species of the genus; half-hardy, but growing vigorously in the open air during summer, and readily increased by cuttings. — *Dendròbium monilifórme*, *Necklace-stemmed D.* Worthy of notice for the rose colour of its flowers, that colour not being common among the exotic *Orchídeæ*. A native of China and Japan, and introduced by the Horticultural Society. Cultivated with great success by William Cattley, Esq., at Barnet. — *D. longicórnu*. A fine species from the mountains in Nepal, where it blossoms during the rainy season. "An epiphyte, usually hanging down." In the garden of the Horticultural Society, it grows pretty well in decayed vegetable mould, among moss, in the stove." — *Banksia undulàta*. "Whether this is any thing more than a variety of *Báńksia serràta* we cannot undertake to decide. It is certainly not the same as the plant cultivated in our gardens under that name, differing in the shortness of its leaves, and their very undulated surface. Mr. Campbell, gardener to the Comte de Vandes, in whose collection it exists, finds it permanently distinct both from *B. serràta* and *æ'mula*. It is a fine green-house plant, attaining a height of 9 or 10 ft., and flowering in September and October." — *Acàcia álvida*. A hardy green-house shrub, with whitish leaves, bipinnate, and yellow flowers; raised in the garden of the Horticultural Society, from Peruvian seeds. — *Pentstèmon deístus*, *Parched Pentstemon*. A hardy perennial, of the easiest culture, with yellowish white flowers in September. From North-west America, by Mr. Douglas, to the Horticultural Society. — *Grevíllea puníceá*. A beautiful species, nearly related to *G. seríceá*. From the Clapton nursery.

No. III. for May, contains

1320 to 1327. — *Cápparis acuminàta*. A beautiful, tender, green-house shrub from China, by John Reeves, Esq., to the Horticultural Society, where it flowered in September, 1828. — *Pachypòdium tuberòsum*; *Apocýneæ*. From barren sandy plains at the Cape of Good Hope, to Mr. Tate's nursery, Sloane Street, in 1828. — *Cássia austràlis*. One of the handsomest of the genus, and highly deserving a place in the open border of a conservatory. It produces fragrant yellow flowers in May and June. "In their

native places, cassias are often among the most beautiful bushes of the forest, covered with myriads of flowers of the richest yellow, and scarcely inferior in the gracefulness of their foliage to the *Mimosa* itself; yet, in our gardens, they are generally unsightly and neglected: a circumstance which arises entirely out of our bad or imperfect cultivation. We grow them in a pot, where they are suffered to languish; or, if they attempt to push vigorously, the pruning-knife is freely employed to restrain them within such a space as the gardener can afford. They will not bear pruning; they require plenty of space to grow, and encouragement rather than restraint. If a more liberal and judicious management were adopted, many species, particularly this, would amply repay the care of the cultivator." — *Convolvulus farinosus*, Mealy-stemmed Convolvulus. From Madeira in 1777. — *Astragalus succulentus*. Originally found by Dr. Richardson in Arctic America. An "unpretending" hardy perennial, growing freely in peat, and producing purple flowers in June. — 1325. to be explained in next number. — *Linum mexicanum*. A pretty half-hardy perennial, with yellow flowers, and probably to be propagated by cuttings. — *Erythrina carnea*. From the hottest parts of South America, and rather handsome while in flower.

Botanical Cabinet. By Messrs. Loddiges. In 4to and 8vo Parts, monthly. Large paper, 5s.; small paper, and partially coloured, 2s. 6d.

Parts CLIII. and CLIV. for January and February, contain

1521 to 1540. — *Erica exposita*. — *Cotoneaster affinis*. A fine robust shrub from Nepal, 6 ft. high, and well clothed with branches, with white flowers in May or June. — *Oxalis Martii*. From Mexico, by Mr. Barclay; the specific name, "in honour of that celebrated traveller and botanist Von Martius." — *Cactus gibbosa*, *Polygonum viviparum*, *Grævia occidentalis*, *Gæum coccineum*, *Isotoma axillaris*, *Thunbergia capensis*, *Thymus azoricus*. — *Cotoneaster melanocarpa*. From the south of Russia. — *Barbacenia purpurea*. A beautiful little stove plant from Brazil. — *Ribes fragrans*. Yellow flowers, and hardy. — *Potentilla alba*; *Strelitzia reginæ*, *Plumbago rhomboidea*, *Epidendrum patens*. — *Gonolobus grandiflorus*. A greenhouse climber, of easy culture, with greenish-yellow flowers during the summer and autumn. — *Rudbeckia serotina*. A hardy perennial from Louisiana, with reddish-purple flowers in September and October. Easy culture. — *Ficus quercifolia*. "A small species, fruiting at less than 2 ft. high; the leaves and whole appearance are so much like an oak as to amount almost to a deception at a little distance." Stove and cuttings.

Part CLV. for March, contains

1541 to 1550. — *Penstemon gracilis*, *Pýrola chlorantha*, *Linum angustifolium*, *Acacia undulæfolia*, *Fuchsia microphylla*, *Argemone grandiflora*. — *Herbertia pulchella*; *Irídeæ*. A pretty little green-house bulb. — *Ixia viridiflora*. "The flowers are exceedingly beautiful; they are of a most soft and agreeable, but very unusual, colour;" bluish-green petals, of a deep purple, black at the base. — *Diospyros vaccinioides*. A neat little myrtle-like green-house plant. — *Verbena pulchella*.

Part CLVI. for April, contains

1551 to 1560. — *Oxalis papilionacea*, *Davièsia*, *genistoides*, *Commelina undulata*, *Astroloma humifusum*. — *Magnolia pumila*. Introduced from China in 1790, by Mr. Slater, the early patron of Mr. Main. — *Macradenia lutescens*; *Orchideæ*. Stove. — *Calceolaria arachnoides*. From Chile, where it is used in dyeing. Flowers purple; green-house. — *Liparis elata*; *Orchideæ*. Stove. — *Psoralea bracteata*. A green-house shrub, from the Cape. — *Tradescantia crassula*.

Part CLVII. for May, contains

1561 to 1570. — *Kleinia suffruticosa*. From Mexico to the Paris garden,

and thence to the Hackney garden in 1829. — *Grevillea buxifolia*. One of the finest species of one of the most beautiful and singular families of Australian shrubs. — *Erica pilularis*. — *Lasiopetalum dumosum*. — *Alyssum alpestre*. From Mount Cenis. — *Gloxinia caulescens*. — *Asplenium flabellifolium*. A delicate little fern, discovered by Mr. Brown near Port Jackson. — *Saxifraga leucanthemifolia*. From arctic America. — *Ononis fruticosa*. — *Fiburnum lantanoides*. "A small hardy tree, a native of shady woods, on high mountains, from Canada to Virginia: with us it arrives at the height of 4 or 5 ft., and flowers in June. The leaves, which are deciduous, are large and showy. It may be increased by layers, and thrives best in a mixture of peat with common garden earth."

The British Flower-Garden. By Robert Sweet, F.L.S. &c. In 8vo Numbers, monthly, 3s.

No. VIII. for January, contains

29 to 32. — *Gagea minima*. The present pretty little spring-flowering plant has caused a good deal of confusion amongst botanists, many supposing it to be a distinct species from the Linnean plant; we are, therefore, glad of an opportunity of clearing up all doubts, from a comparison of two well preserved specimens in the Linnean herbarium, marked in Linnæus's own hand-writing.

"The plants from which our drawing was made, at the nursery of Mr. Colville, were received from M. Schleicher of Bex, who collected them in Switzerland, and sent them under the name of *Ornithogalum Sternbergii*. It may be considered a very valuable plant, on account of its early flowering, which is about the same time as the snowdrop and crocus, making a variety at the season that it is most needed, and expanding its bright, little, starry flowers to the sun; those close up every evening, and expand again at the sun's approach. A border in a southern aspect is the best to plant it in, as the flowers will then appear earlier, and expand sooner of a morning; a light sandy soil suits it best, and it increases by offsets from the bulbs, or by seeds.

"The genus was first named by Mr. Salisbury, in the *Annals of Botany*, in compliment to Sir Thomas Gage, a great amateur of botany."

No. IX. for February, contains

33 to 36. — *Cypella Herberti*; *Irídeæ*. From Buenos Ayres: not unlike *Tigridia*; producing a great number of bright orangy-yellow flowers, which expand in succession during a great part of the summer. The bulbs should be planted in light soil, by the south side of a wall, and protected like Cape bulbs during severe weather. — *Lubinia* (M. de St. Lubin, a French officer, who travelled in the East Indies) *atropurpurea*; *Primulacæ*. The *Lysimachia atropurpurea* of Hooker's *Exotic Flora*. A creeping-rooted herbaceous perennial, very beautiful, and requiring a sheltered border and a southern aspect. — *Tagetes florida*. A handsome perennial species from Mexico, requiring a little protection during winter, but not so much as *T. lucida*. — *Phlox glaberrima*. From wet meadows in Carolina. Reddish-lilac flowers, dyeing off bluish. "It is a very handsome plant, readily distinguished from most others by its entire smoothness and glossy appearance: what still makes it the more desirable is its low growth, seldom exceeding 18 in. in height, and thriving well in the common garden soil. It may be readily increased by dividing at the root; or young cuttings planted under hand-glasses in spring will soon strike root, and make flowering plants the same summer."

No. X. for March, contains

37 to 40. — *Lathyrus venosus*. A most luxuriant species, from low meadows in Pennsylvania, and the declivities of shady hills in Alleghany. It propagates freely by seeds or division, and, we think, deserves trial as a

forage plant. We shall be particularly obliged to Mr. Barclay of Bury Hill, from whose garden Mr. Sweet figured this plant, if he will send three or four seeds to Mr. Shirreff of Mungos-wells, near Haddington, and Mr. Gorrie of Annat Gardens, near Errol, Perth. These cultivators, we know, would not only give them a fair trial, but form a rational estimate of their general worth to the agriculturist. A perennial forage plant, that would be as useful in the strong clays and cold climate of Scotland, as the saint-foin is in dry soils, and the lucern in a warm climate in England, would be a valuable acquisition. — *Leptostélma* (*leptos*, slender, *stelma*, a crown; slender rays of the flower) *máximum*; *Compósitæ Astèreæ Bellídeæ*. A perennial which, at Bury Hill, last summer, attained the height of 7 ft., and made, with its blue rays, a splendid appearance. It flowers from the beginning of September to the end of November, and is, therefore, a valuable autumn plant. — *Lapeyroúsia* (Picot de la Peyrouse, aut. of *Figures de la Flore de Pyrénées*) *aculeàta*; *Irídeæ*. A curious and pretty plant from the Cape of Good Hope. The best soil for it is an equal quantity of light turfy loam, peat, and sand; and they may either be taken up after flowering, and kept dry till the end of October, or remain protected from the frost by a mat or litter. Offsets from the root or seeds. — *Silène pusílla*. A perennial, growing in a close dense tuft.

No. XI. for April, contains

41 to 44. — *Verbèna elàta*. An elegant stately plant, from the “superb collection at Bury Hill,” whence Monte Video seeds were sent by Mr. Hunnemann. — *Ornithógalum montànum*. An interesting bulb from Naples, readily distinguished from *O. umbellàtum* by its large simple bulb, “which produces few or scarcely any offsets; whereas, that species is surrounded by a nest of them.” It requires a little protection in winter. — *Potentílla Mackayàna*. A hybrid between *P. formòsa* and *opàca* raised by Mr. Mackay at the Clapton nursery. Flowers yellow, tinged with red, and the base of the petals light red. — *Eriócoma fràgrans*. A fine, fragrant, whitish-flowered plant from Mexico, by R. Barclay, Esq., in 1827, which flowered last autumn at Bury Hill, for the first time. Like most of the plants from Mexico, and the temperate parts of South America, it requires protection in winter.

No. XII. for May, contains

45 to 48. — *Triósteum perfoliàtum*; *Caprifoliàceæ*. A stately, upright, curious, herbaceous perennial, from limestone rocks in New England, but rare there; sent to England by Mr. Hogg, and Mr. Prince of New York and of Long Island. “It is seldom to be met with in our collections, chiefly owing, we believe, to the plants being generally planted in pots, where the roots have not sufficient room to spread themselves; and, as they are also frequently exposed to the cold in winter, the mould becomes all frozen through, which occasions them to perish. This would not be the case were they planted pretty deep in the flower-borders, in a rich soil; the roots would then have room to spread, and the frost would not be so liable to injure them. They may be readily increased by dividing at the root, or by seeds, which are frequently ripened.” — *Phlóx penduliflòra*. Very showy. — *Goodyèra pubéscens*. A curious orchideous plant, from rocky situations in Canada, where it flowers in July; and, according to Pursh, it “has lately made a great noise among the country people as infallibly curing the bite of a mad dog.” — *Soldanèlla pusílla*. Smaller than *S. alpina* received by Mr. Colville from M. Schleicher of Bex, in Switzerland.

Cistineæ. By Robert Sweet, F.L.S. &c. In 8vo Numbers, every alternate Month. 3s.

No. XXVIII. for January, which completes the Volume, contains

109 to 112. — *Heliánthemum hírtum*. A pretty species from the south of Europe. — *H. glomeràtum*. An obscure-flowered curious little plant

from Mexico. — *H. glaucum*. A pretty species, a native of the south of Europe, from the collection at Bury Hill. — *Cistus crêticus*. A handsome, upright, dwarf, bushy shrub, with bluntly rounded leaves, and large reddish purple flowers, a native of Greece, requiring protection in winter.

In the preface to the volume which accompanies this number, the author states that he has brought the work to a conclusion, not so much for want of other species and varieties to figure and describe, as because he “believes it will be more agreeable to the greater part of his subscribers.” Much less attention, he observes, has been paid to this beautiful natural order than it deserves, “which, we hope, will not be the case in future, as a very little protection is sufficient for the whole of them; and nothing produces a more brilliant effect than a collection of them planted in rockwork, or even grown in small pots, and placed together in a clump, where the different colours may all be intermixed, or kept separate, according to the taste or fancy of the possessor.”

A description of the Natural Order is given, and the species arranged under the genera *Cistus*, *Heliánthemum*, *Hudsonia*, and *Lechea*, with the following sections: —

CISTUS.

Sect. 1. *Erythrocistus* (*erythros*, red, and *Cistus*). — *C. complicatus*, *sericeus*, and *hybridus*.

Sect. 2. *Ledonia* (having the habitat of *C. Lèdon*). — *C. Lèdon*, *Sideritis*, and *parvifolius*.

HELIA'NTHEMUM.

Sect. 1. *Halimium* (having the habit of *H. halimifolium*). — *H. Libanotis*, *alyssoides*, *atriplicifolium*, *lasianthum*, and *involucratum*.

Sect. 2. *Lecheoides* (*Lechea*, and *eidos*, like; habitat). — *H. corymbosum*, *rosmarinifolium*, *ramuliflorum*, *obcordatum*, *tripetalum*, and *astylum*.

Sect. 3. *Tuberaria* (having the habit of *H. Tuberaria*). — *H. globulariæfolium*, *bupleurifolium*, *heterodoxum*, *plantagineum*, *guttatum*, and *inconspicuum*.

Sect. 4. *Macularia* (*macula*, a spot; base of petals). — *H. lunulatum* and *petiolatum*.

Sect. 5. *Brachypetalum* (*brachys*, short, *petalon*, petal). — *H. villosum*, *niloticum*, *procumbens*, *intermedium*, *denticulatum*, *sanguineum*, and *ægyptiacum*.

Sect. 6. *Eriocarpum* (*erion*, wool, *karpos*, fruit). — *H. Lippæ*, *sessiliflorum*, *ruficomum*, *lanuginosum*, *micranthum*, *kahricum*, *confertum*, *canariense*, *mucronatum*, *distachyum*.

Sect. 7. *Fumana* (having the habit of *H. Fumana*). — *H. ericoides*, *læve*, *viride*, *juniperinum*, *Barrelieri*, and *syrcticum*.

Sect. 8. *Pseudocistus* (*pseudos*, false, and *Cistus*). — *H. piloselloides*, *molle*, *organifolium*, *dichotomum*, *penicillatum*, *obovatum*, *italicum*, *Serræ*, *marifolium*, *rotundifolium*, *rubellum*, *crassifolium*, *paniculatum*, *polyanthum*, *cinereum*, and *squamatum*.

Sect. 9. *Euheliánthemum* (*eüs*, fine, and *Heliánthemum*). — *H. lavandulæfolium*, *Broussonetii*, *stœchadifolium*, *nudicaule*, *acuminatum*, *ovatum*, *lucidum*, *angustifolium*, *obtusifolium*, *Lagascæ*, *violaceum*, *farinosum*, *strictum*, *hispidum*, *fœtidum*, *ciliatum*, *asperum*, *majoranæfolium*, *hirsutum*, and *oligophyllum*.

HUDSO'NIA (the English botanist Hudson).

H. Nuttallii, *montana*, and *australis*.

LECHE'A (G. Leche, a Swedish botanist, died in 1764).

L. villosa, *minor*, *racemulosa*, *thymifolia*, *tenuifolia*, and *verticillata*.

Amateurs who wish for a small collection may order such species of each of the four genera as can conveniently be got; those who wish for

what we should call a complete collection may give a similar order with respect to each of the sections. As to the practicability of procuring all the 112 species, that we should consider next to impossible. Certainly, there cannot be a more beautiful and suitable family for a rockwork, and Mr. Sweet deserves every encouragement for having brought it so favourably and effectively into notice. All who can afford it should possess his work.

Geraniaceæ. By Robert Sweet, F.L.S. &c. In 8vo Numbers, monthly. 5s.

Nos. XIX. and XX. for January and February, contain

73 to 80. — *Pelargonium contiguum atrovirens*. Raised by the interesting widow (Vol. V. p. 448.) More, at her nursery, King's Road, Chelsea, and supposed to be a triple hybrid from *macranthum*, *amplissimum*, and *grandiflorum*. Very splendid and well worth purchasing. — *P. laxulum*. A hybrid by Mr. Dennis. — *P. pullaceum*. A pretty, little, dwarf, bushy hybrid, raised by Mr. Smith in the gardens at Coomb Wood, in 1828. — *P. mollifolium*. — *P. instratum*. — *P. Bluntianum*; named in compliment to Miss Blunt of Enham, Hants. — *P. adventitium*.

Nos. XXI. and XXII. for March and April, contain

81 to 88. *Pelargonium Veitchianum*. Raised in Mr. Veitch's nursery at Killerton, near Exeter. — *P. Glorianum* (Queen of Portugal). A hybrid, from the nursery of Mr. Dennis. — *P. Colleyanum*. From the collection of Messrs. Colley and Hill at Hammersmith. — *P. lanosum*. From the nursery of Messrs. Young at Epsom. — *P. clathratum*. A hybrid, by Mr. Dennis. — *P. implicatum*. Another by L. Weltje of Hammersmith. — *P. politum*. A hybrid, by Mr. Dennis. — *P. iconicum*. A hybrid, by Mr. W. Smith of Coombe Wood. This variety is remarkably handsome.

The Botanic Garden. By B. Maund, F.L.S. &c. In small 4to Numbers, monthly. Large paper, 1s. 6d.; small paper, 1s.

Nos. LXI. and LXII. for January and February, contain

241 to 248. — *Pæonia Moultan* var. *papaveracea*. Mr. Maund's new mode of propagating this plant we have already given. (p. 102.) — *Sanguinaria canadensis*. — *Cynoglossum omphaloides*. — *Narcissus Tazzetta*. — *Tulipa Gesneriana*. — *Asphodelus luteus*. — *Antennaria dioica* (*Gnaphalium dioicum* L.). — *Phlox subulata*.

Nos. LXIII. and LXIV. for March and April, contain

249 to 256. — *Rosa centifolia*. — *Muscari commosum*. — *Asphodelus ramosus*. — *Loasa acanthifolia*. — *Dianthus plumarius*. — *Alyssum saxatile*. — *Polygonatum multiflorum*. — *Daphne Cneorum*. The grand secret of keeping this species of *Daphne* in health chiefly consists in the annual laying of its branches, as they continue to spread, fastening them down with hooks, and laying a little sandy peat among them.

No. LXV. for May, contains

257 to 260. — *Commelina tuberosa*. — *Pentstemon digitalis*. — *Tolpis barbata*, and *Mathiola annua*.

The Florist's Guide and Cultivator's Directory, &c. By Robert Sweet, F.L.S. &c. In 8vo Numbers, monthly. 3s. coloured; 2s. plain.

Nos. XXXI and XXXII. for January and February, contain

121 to 128. — Wilmer's Duke of York Tulip. From Brown's nursery at Slough, "where the choicest tulips are cultivated with the greatest success, many of them attaining double the size of those that are cultivated in the common way." — Pearson's Rising Sun Carnation. From the choice collection of Mr. T. Hogg, Paddington Green, 4s. a pair. — Yellow Ophir Hyacinth. Very double, and not proper for early forcing. — Strong's Rainbow Tulip. — Shad's Telegraph Polyanthus. From Mr. T. Hogg of

Paddington Green. — *Laodice Ranunculus*. From the choice collection of Richard Percival, Esq. jun., at Highbury Park, Islington. — *Burnard's General Quiroga Auricula*. From the collection of J. P. Burnard, Esq., of *Formosa Cottage*, Holloway, where it was raised from seed. — *Prince Leopold Tulip*. From the middle row of the tulip bed of Mr. T. Davey, in the *King's Road*, Chelsea.

Nos. XXXIII. and XXXIV. for March and April, contain

129 to 136. — *Publicola Picotee*. Yellow flowers, the petals margined with red and purple. — *Pherobasis Ranunculus*. Singular from its petals being so much darker underneath than they are on the upper side. — *Wood's Delight Auricula*. — *Burnard's Agitator Tulip*. — *Millard's Star of Brunswick Picotee*, 10s. per pair. Singular, yet pretty. — *Warris's Union Auricula*, 7s. 6d. each. — *Strong's Canning Tulip*. Grown in the second row of the tulip bed of W. Strong, Esq., of *Albion Cottage*, Brook Green. — *Quixos Ranunculus*. From the collection of Mr. Pile, Cambridge Road, Mile End.

No. XXXV. for May, contains

137 to 140. — *Cox's Buff Ranunculus*. From the select collection of Richard Percival, jun. Esq. at Highbury Park, Islington. — *Alexandrina Tulip*. — *Cochineal Hyacinth*. From Mr. Shepard of Bond Street, who is supposed to be the only seedsman in London who has received the sort from Holland. — *Knight's Lady Craven Pink*. The last three flowers are of surpassing beauty.

Medical Botany, &c. By John Stephenson, M.D., and James Morss Churchill, Esq., Surgeon. In 8vo Numbers, monthly. 3s. 6d.

No XXXVIII. for February, contains

149 to 151. — *Bonplandia* (Humboldt's companion) *trifoliata*; *Simarubiacæ*. An elegant evergreen tree, from 60 to 80 ft. high, a native of South America, and the bark of which is known in the *Pharmacopœias* under the name of *Angustura*, or *Cusparia*. This bark has a disagreeable smell, and a bitter taste, slightly aromatic; by analysis it contains cinchonia, resin, a peculiar variety of extractive, carbonate of ammonia, and essential oil. There is a false bark employed in commerce; but from what tree is not correctly ascertained; it is known from the other by having no smell, and by being one of the most energetic of vegetable poisons. The true *Angustura* bark is a valuable tonic, and has been considered more powerful in many diseases than the Peruvian bark. — *Crôton Eleutéria*. A small tree, from Jamaica and St. Domingo, with brittle branches, which, when broken, ooze out a thick balsamic juice. The bark has an agreeable aromatic odour, and, when burnt, emits a smell resembling that of musk. It has been used a good deal in Germany as a substitute for the Peruvian bark, and also for mixing with tobacco for smoking. In England it is used as a stomachic. — *Quercus Rôbur*. "Cut in spring the bark will be found to contain four times as much tannin as when obtained in winter. Oak bark is a powerful astringent and tonic, and, united with bitters and aromatics, has been recommended in intermittents. When *Cinchona* bark cannot be obtained, and the stomach rejects its preparations, oak bark may be found of service; but the former is so superior to all its competitors, that oak bark is but a poor substitute."

No. XXXIX for March, contains.

152 to 155. — *Quercus infectoria*. This species produces the nut galls of commerce, as Olivier, in his travels in the Ottoman empire, first discovered. It is scattered throughout all Asia Minor, and as far as the frontiers of Persia. The fruit is solitary, and nearly sessile. "The galls are produced on the young branches, from the puncture of a small hymenopterous

insect of the Linnean genus *Cynips*, but which was first described by Olivier, in the *Encyclopédie Méthodique*, under the name of *Diplôlepis gallæ tinctoriæ*. The insect punctures the tender shoot with its curious spiral sting, and deposits its egg in the puncture. In a few hours the cellular tissue swells, a tumour is produced, and the egg becomes enclosed in a fleshy chamber, which not only serves for shelter and defence, but also for food; the larva feeding upon its interior, and there undergoing its metamorphosis. The oak apple is an excrescence of the same nature, though effected by a different species of insect." The best galls come from Aleppo; and the produce of the first gathering, before the fly has issued from the gall, are the most valuable. With the assistance of heat, galls are almost entirely soluble in water; and the decoction precipitates the oxides of iron of a deep black colour,—ink. Medically, galls, being most powerful astringents, are occasionally prescribed, combined with tonics and aromatics. — *Scilla maritima*, the Sea Onion, or *Officinal Squill*; *Asphodèleæ*. The bulb is as large as a child's head, and contains, by chemical examination, a bitter principle named scillitine, gum, tannin, citrate of lime, sugar, and woody fibre. According to the dose given, squill is either expectorant, diuretic, emetic, or purgative. — *Ficus carica*, the Carian, or common, fig tree. The fruit is used medicinally in what are termed pectoral or demulcent decoctions. "The most ancient cataplasm on record is that which was used by Hezekiah, who lived 260 years before Hippocrates. 'And Isaiah said, Take a lump of figs, and they took and laid it on the boil; and he recovered.' " — *Cassia fistula*. A native of Egypt, and naturalised in the West Indies and South America. The pods are imported from the West and East Indies; the pulp is the part used, and it is separated from the woody parts and seeds by passing it through a sieve. It is used as an agreeable laxative to children; but Dr. Cullen and others see no advantage it has over the pulp of prunes. — *Cassia marylandica* is a beautiful perennial plant, the dried leaves and follicles of which form a mild cathartic, little, if at all, inferior to the senna of the shops.

No. XL. for April, contains

156 to 159. — *Pimpinella Anisum*. A hardy annual, a native of Egypt, and cultivated in Malta, Spain, and some parts of the south of France, for its seeds. These seeds are powerfully aromatic and warm, and contain an essential oil, which is separated by expression. The seeds are used in dyspepsia, flatulencies, and other stomach complaints. Milk drawn from the breast, after taking the essential oil, is found impregnated with its odour [in the same way as with that of garlic, after that bulb has been eaten]. — *Amýris gileadensis*; *Terebintaceæ*. A small, stunted-looking, evergreen tree, a native of Arabia, near Yemen, and, according to Bruce, of Abyssinia. Though not a native of Judea, it was cultivated in great perfection many centuries before Christ in the gardens near Jericho, on the banks of the Jordan; and it was from Gilead in Judea, whence the merchants brought the resinous product to Egypt, that it derived its appellation of Balsam of Gilead Tree. The balsam is a resinous juice that distils from the tree naturally. "It is at first turbid and white, of a strong, pungent, agreeable smell, and slightly bitter acrid taste; upon being kept, it becomes thin, limpid, of a greenish hue, then of a golden yellow colour, and, at length, like honey." It is highly "prized among the Eastern nations, particularly by the Turks and Arabs, both as a medicine and odoriferous unguent and cosmetic. It has been highly extolled as a powerful antiseptic, vulnerary, and preventive of the plague. In its medicinal properties it agrees with the balsams of Tolu, Peru, and others of the same class; but its great scarcity has prevented it from coming into use among European practitioners. It is extremely liable to adulteration, and, from its high price and scarcity, we believe that a single ounce of the genuine balsam of Gilead is not to be obtained in this country, or even in Europe." — *Copaífera officinalis*; *Le*

guminosæ. A South American tree, very abundant at Tolu and a great many other places, from incisions in the trunk of which a resin exudes. It is at first of the consistence of oil, but gradually becomes solid like resin. Balsam of Copaiba, as it is then called, is stimulant, diuretic, and cathartic, and is chiefly employed in cases connected with the urinary vessels. — *Papaver somniferum.* A showy garden annual in England, but in Turkey, Persia, India, and other warm climates, extensively cultivated for the purpose of obtaining opium, and for the warm bland oil which is expressed from its seeds, and serves as a substitute in these countries, as well as in Europe, for the oil of olives. "The unripe capsules, upon being wounded as they grow, exude plentifully a whitish, opaque, milky juice, which by drying becomes opium.... The plants in the East are well watered from the time when the flowers begin to appear till the capsules are half grown, when it is discontinued, and they begin to collect the opium. This they effect by making, at sunset, two longitudinal incisions from below upwards, without penetrating the internal cavity, with an instrument that has two points as fine and sharp as a lancet. The incisions are repeated every evening, until each capsule shall have received six or eight wounds, and they are then allowed to ripen their seeds. The juice which exudes is collected in the morning by women and children, who scrape it off the wounds with a small iron scoop, and, being inspissated to a proper consistence by working it with wooden spatulas in an earthen pot in the sun's heat, it is formed into cakes for sale." In Britain opium has been obtained from the poppy, said to be in no degree inferior to the Oriental. In 1796 Mr. Ball, and in 1819 Mr. Young, were both rewarded with premiums from the Society of Arts for growing the poppy for its opium, and for its oil; and Mr. Young, who is a surgeon in Edinburgh, found that a crop of early potatoes may be grown along with the poppies.

Flora Médica, &c. In 31 Numbers, price 3s. each.

This work is now completed, and forms two very cheap 8vo volumes, illustrated with numerous very well executed plates. The letter-press is passably good, as we are informed by one who should be a competent judge; and the work may be therefore safely recommended to the medical student.

The Pomological Magazine. In 8vo Numbers, monthly. 5s. coloured; 3s. 6d. plain.

No XXVIII for February, contains

109. *Lucombe's Seedling Apple.* Raised by Messrs. Lucombe of Exeter. A large handsome variety, chiefly valuable as a kitchen apple. Ripens in October, and keeps through the winter.

110. *The White Spanish Reinette Apple*, the Fall Pippin of the Americans, and the Reinette d'Espagne, *Camuesar*, or national apple of Spain. A very close approach to that rare and highly prized variety, the Newtown Pippin. "In quality it stands in the first class; its firm, rich, high-flavoured flesh, its beauty, and its capability of keeping, being scarcely exceeded. Its principal defect is its gigantic size." Ripe in November, and keeps till February. "A free and abundant bearer, but more adapted for a dwarf than a standard, on account of the large size of the fruit, which is apt to be blown off by high winds."

111. *Kirke's Plum.* Brought into notice by Mr. Kirke, who found it by accident in a fruiterer's window. "As hardy and prolific as the Orleans, as handsome as the Damask, and as good as the Green Gage."

112. *The Forelle Pear.* A small, very beautiful variety, of German origin, and called the Forelle, Truite, or Trout Pear, in allusion to the specks on, and beautiful colour of, its skin. Ripens in November, and lasts

till January. A vigorous, hardy, upright-growing tree, and a good bearer as a standard.

No. XXIX. for March, contains

113. *The Downton Pippin*. Raised by Mr. Knight from a seedling of the Hereford variety called the Orange Pippin, and the pollen of the Golden Pippin. A most useful table fruit; and as the saccharometer as well as the palate indicates that its expressed juice holds in solution a large quantity of saccharine matter, it is also an excellent table apple. A great bearer; ripe in October and November; and keeps till January.

114. *The Brown Beurrée Pear*. None better; but it must have a wall, and, if possible, a south one. "Mr. Thompson has determined, beyond all doubt, from the examination of various trees in the garden of the Horticultural Society, and from a careful comparison of the descriptions of authors, that the Red, Brown, and Golden Beurrées are all the same. This was long since asserted by the always accurate Duhamel." Ripe in October; and keeps till the end of that month.

115. *The Waterloo Cherry*. Raised by Mr. Knight from the pollen of the Mayduke and a seed of the Ambrée of Duhamel. Ripe in the end of June, or earlier on a wall. The leaves are large, and as the fruit does not acquire a good colour unless freely exposed to sun and air, the branches should be laid in widely apart. The stamens are shorter than the styles; a peculiarity which Mr. Thompson has observed to be universal in all the Duke cherries.

116. *The Summer Pearmain*, the Royal Pearmain of most nurseries. "One of the best of our autumn apples; prolific, handsome, high-flavoured, and hardy." Ripe in September, and keeps till the middle of October.

No. XXX. for April, contains

117. *The King of the Pippins Apple*. Of modern origin, and brought into notice by Mr. Kirke of Brompton, to whom the public is indebted for the introduction of some of our best varieties of fruit. Tree hardy, and a great bearer; fruit above the middle size; among the handsomest of the season; in perfection in November, but will keep till January.

118. *The Belle et Bonne Pear*. Sent to the Horticultural Society, in 1826, by Messrs. Baumann of Bolwiller. One of the very best of autumn pears, in perfection about the end of September. It bears extremely well as a standard, and also takes readily upon a quince stock.

119. *The Royal George Peach*. Ripens in the end of August or beginning of September, and is a proper sort for a peach-house. Mr. Thompson, "whose successful labours in settling the names of fruit in general, and of peaches and nectarines in particular, will, we are sure, be, at no distant period, considered as one of the most useful results of the Horticultural Society's garden," considers that the Royal George and Red Magdalen are the same. "The Royal George and Red Magdalen are different, say some, because the former is subject to mildew: others say there is a difference, because the latter is the one that is most subject to it. The fact is, the same tree will mildew in one season, and not in another. A remedy, or at least a preventive in a great measure, for this, is to keep the borders clear and in good condition, and to see that there be nothing to obstruct a free circulation of air, and a full admission of sun." Mr. Thompson has arrived at the above conclusion from an examination of twenty fruiting trees.

120. *The Autumn Bergamot Pear*. This is not the Bergamot d'Automne of the French, and its origin is not known. "If we are to believe Switzer, it was brought over by Julius Cæsar, and formed part of the 'furniture' of the gardens of Alcinous. According to Manger, it is of the highest antiquity, and was, without doubt, in former times, the only one to which they gave the name, which is also now applied to other similar flat pears. This

name, he says, is not derived from Bergamo in Italy, as many have believed, but from the Turkish words *beg* or *bey*, a prince, and *armoud* a pear. He also shows that this princely pear was formerly written, not *Bergamotte* but *Begarmoud*, by referring to Groen's *Niederländischen Gärtner*. As its name is Turkish, he infers that this sort must have come from Turkey, and consequently originated in a warmer climate." The tree bears well as a standard, even as far north as Yorkshire; fruit small, globular, hollowed at the eye and stalk, in perfection in October, and decaying soon afterwards.

No. XXXI. for May, contains

121. *Bowyer's Russet Apple*. Received by the Horticultural Society in 1824, from Mr. Boulton of Hawthorn Hill, Maidenhead. A handsome and valuable autumn table-fruit, middle or rather small sized, ripening in the beginning of September, and consequently one of the earliest of the russets, and keeping for some time afterwards. Tree perfectly hardy, and a great bearer as a standard.

122. *The Marie Louise Pear*. Sent to the Horticultural Society in 1816, by Dr. van Mons of Brussels, by whom it had been raised, and thought to be the same pear named by the late Mr. Braddick *Forme de Marie Louise*, and described in the *Gard. Mag.*, Vol. III. p. 353. as the best autumn standard pear. Mr. Braddick, who unquestionably introduced more new fruits, and especially pears, than any other individual, distributed cuttings of this variety among the nurserymen soon after he received it, and it has, in consequence, been extensively cultivated and universally admired. "It has been found one of the most valuable of our autumn pears, bearing equally well on a standard and a wall, resisting the inclemency of such a climate as even that of Norfolk, and appearing capable of affording a certain crop, under whatever circumstances it may be placed. In flavour and beauty it has scarcely a superior. In the unfavourable season of 1829, while even the Achan pear, which the Scotch consider one of the best-adapted to their northern situation, acquired no flavour as a standard near London, the Marie Louise gained its usual, size, colour, and flavour. . . . It ought to be in every collection, however limited or select; and it is perfectly invaluable to those who have not walls for pears. Ripens in the middle of October, and keeps till the end of November. Shoots moderately strong, rather dark-coloured, with dull brown spots." Fruit large on walls, middle-sized on standards; oblong, tapering from the middle towards both ends. Flesh white, exceedingly juicy, melting, buttery, and rich.

123. *The Red Astrachan Apple*. Imported by Mr. Atkinson from Sweden, and first fruited by him in his garden at Grove End in 1816. Exceedingly handsome, middle-sized, red, and the tree hardy and a good bearer. Ripe about the middle of August, but it keeps only a few days. "It is one of those apples that produce a copious bloom upon the skin; which in this instance is like that upon a plum."

124. *The Brickley Seedling Apple*. Resembles the Scarlet Nonpareil, but keeps better. "A first-rate fruit for February, March, and April. The tree is very hardy, and a profuse bearer, either as standard or dwarf. It may be said to be one of the most valuable varieties we possess. It is uncommonly beautiful."

Illustrations and Descriptions of the Plants which compose the Natural Order Camelliæ, and of the Varieties of Camellia japonica cultivated in the Gardens of Great Britain. Drawings by Alfred Chandler; Descriptions by William Beattie Booth, A.L.S. London. Imp. 4to. Parts I. and II. 7s. plain, 10s. 6d. coloured; extra-size, 18s. Expected to be completed in 25 Parts.

Part I. contains

1. *Camellia japonica*, Japanese, or *Single Red*, C.; *Bot. Mag.* t. 42. This is the first species that was introduced into this country, and is stated in the

Hort. Kew. to have been cultivated by Robert James Lord Petre, in 1739. It is not noticed in the 8th edition of *Müller's Dictionary*, published in 1768, so that it must have been rare at that period; one reason for which is, that it is generally treated as a stove plant: afterwards it was found to succeed in a much lower temperature. In China it is said to grow freely, and attain the height of one of our cherry trees. In this country, being of free growth, and easily increased by cuttings, and being also the hardiest of all the species or varieties, it is employed as a stock on which to graft or inarch all the other sorts. In the neighbourhood of London, in Paris, and in some of the country nurseries, it is extensively grown for this purpose.

2. *C. maliflora*, Apple-blossomed *C.*; the *C. Sasánqua*, *Bot. Mag.* t. 2080., and *Bot. Reg.* t. 547., and *Bot. Cab.* t. 1134. Introduced in 1816 by Captain Rich. Rawes to the garden of T. C. Palmer, Esq., of Bromley, in Kent, where it flowered in 1818, and was afterwards published in the *Bot. Mag.* as a variety of *C. Sasánqua*, and is usually known by the name of the *Sasánqua rosea*, or Palmer's Double Sasanqua *C.* Its present very appropriate name, *maliflora*, was given by Mr. Lindley in the *Bot. Reg.* f. 1078. "Propagated freely by inarching on the single red, and requires a little more warmth to grow it to perfection than the varieties of *C. japonica*." The leaves are obovate, and thinner and smaller-sized than those of the first-described species or any of its varieties.

3. *C. oleifera*, Oil-bearing *C.*; *Bot. Reg.* f. 492. *Bot. Cab.* t. 1065. The Chinese call it the "oil-bearing tea plant," as it very closely resembles tea. Dr. Abel sometimes found it of the magnitude of a moderately sized cherry tree, and never less than the size of a shrub of 6 or 8 ft. high. At a distance these plants looked as if they had been lightly clothed with snow, but nearer they exhibited one immense garden. This species is said to have been originally brought to the country by Lord Macartney, but was afterwards lost till 1820, when it was reintroduced by Captain Nisbett. It is readily distinguished from *C. Sasánqua*, by being of a much more robust habit, larger in every respect, with thicker leaves, with moderately large serratures, and sharp at the point.

4. *C. reticulata*, Reticulated, or *Captain Rawes's*, *C.*; *Bot. Reg.* t. 1078. Introduced by Captain Rawes in 1820, at the same time with the *Prímula sinensis*. The flower buds are very large, and the flowers remarkably handsome, having a great resemblance, both in form and colour, to those of the *Pæonia Moultan rosea*. "More difficult to propagate than any of the other camellias:" the best mode is by inarching. "We are of opinion that when it becomes so plentiful as to admit of a trial being made, it will be found to be hardier than the *Caméllia japonica*, and that at no distant period, perhaps, it may ornament our shrubberies."

Part II. contains

5. *C. Sasánqua*, the Sasanqua of Japan, and Cha-Whaw of China; Lady Banks's Camellia. Introduced by Captain Wellbank of the East India Company's service, in 1811. Of a loose straggling habit; but, if the principal stem is supported when young, it will attain the height of 6 ft. or 8 ft. Leaves elliptic lanceolate; flowers white, opening in November and December; very much resembling those of the tea tree. There is a semi-double variety, *Bot. Reg.*, f. 1091. It is extensively cultivated in China for the same object as the *C. oleifera*; crushing the seeds for oil, and adulterating tea with the leaves. In China it is said to grow on the debris of rocks and stones; here it succeeds best in moderately strong, rich, sandy soil, and is readily increased by inarching or grafting on *C. japonica*.

6. *C. japonica variegata*, Variegated Japanese, or *double-striped*, *C.*; *Bot. Cab.*, t. 329. One of the first of the double camellias brought from China; it was imported by Captain Connor for the late John Slater, Esq., of the India House, in 1792. A splendid well known variety, which some cultivators place in the warm parts of the green-house, or even in the

stove in spring, so as to forward their growth and make their flowers open in the autumn, by which they are seen to far more advantage than where allowed to remain, and open at the same time with the other camellias.

7. *C. japónica incarnata*, Incarnate Japanese, or *Lady Hume's Blush*, Camellia. A fine and well known variety, imported in 1806 for the late Lady Amelia Hume of Wormleybury, in Hertfordshire. The shoots are long and straggling, and change to a pale brown as they grow old.

8. *C. japónica anemoneflora*, Anemone-flowered Japanese, or *Waratáh* *C.* Introduced about 1806; very distinct from any of the other Chinese varieties, and readily distinguished by its flat and comparatively narrow pointed leaves, and long slender footstalks. The flowers are remarkably showy, and resemble a large double anemone. Like those of some other varieties they drop off whole, and will retain their freshness for a considerable time afterwards; so that, if placed upon a bud, they appear to be still growing.

The figures in this work combine botanical accuracy with pictorial beauty in an extraordinary degree, while at the same time there is no uncalled for attempt at striking effect. *C. japónica variegata*, the *Waratáh*, and the apple-flowered, are exquisitely beautiful specimens. It is highly creditable to the gardening profession that there should be found two young men, the one an assistant in his father's nursery, and the other with no pretensions beyond those of a good gardener, and who, we understand, has actually accepted the situation of head-gardener to a gentleman, capable of producing such a work. It is true that the one, from having been born in a nursery famous for its camellias, and the other, from having had an excellent school education in Scotland, having been bred up under one of the best kitchen-gardeners in that country, Mr. Beattie of Scone, and having been long first gardener and afterwards clerk in the Horticultural Society's garden, have had extraordinary advantages; but how frequently are such advantages comparatively neglected! We are proud to see such young men growing up to succeed us in the world, and think we feel almost as much interest in them as if they were our own sons. To all who can afford to purchase such a work we most heartily recommend it. It is sold at much too low a price to afford the authors any profit, but we hope they will meet with sufficient encouragement to save them from pecuniary loss.

Sowerby's Supplement to English Botany. In 8vo Numbers. Monthly. 3s.

Nos. II. to V., September to December, contain

2598 to 2617. — *Phyteuma spicatum*, *Salix Doniana*, *S. incubacea*, *Rosa Doniana*, "probably a mere variety of *R. Sabini*," *Verrucaria pulchella*, *V. euploca*, *Veronica agræstis*, *Rubus rhamnifolius*, *R. Köhleri*, *Callitriche autumnalis*, *Primula scotica*, *Potamogeton acutifolius*, *Rosa dumetorum*, *R. Forsteri*, *Verrucaria psoromoides*, *V. sorediata*, *Digitaria humifusa*, *Vicia angustifolia*, *Lotus tenuis*, *Woodsia ilvensis*, *Verrucaria biformis*, *V. gemmata*.

Roscoe, Mrs. Edward: Floral Illustration of the Seasons, &c. In 4to Numbers. 9s. each.

No. 4., Winter, is illustrated by three varieties of *Chrysanthemum indicum*, *Tussilago fragrans*, *Helleborus niger*, *Eranthis hyemalis*, *Erica carnea*, and *Galanthus nivalis*. We are happy to see that the figures are better coloured in this number than in the preceding ones.

A Print of Pinks, drawn from five of the finest plants, after gaining the first prize. By R. Havell, jun.

The sorts are, Penney's Queen, David's Britannia, Lady Ackland, Stevens's Waterloo, and Turner's George the Fourth, beautifully executed; but so far displeasing to a practical man, in that they are made all to spring from the same root. This may seem a very trifling matter; but truth and nature ought not to be violated, even on the most trifling occasion. Had

the flowers been grouped so as to form a pyramid, they would have had a better effect. The leaves, or what florists call the grass, should have been imitated from nature.

Banks, George, Esq. F.L.S. : The Plymouth and Devonport Flora; or, a Description of Plants indigenous to the Neighbourhood of these Towns. In 8vo Numbers, monthly. 1s. each. No. I. was published March 27. 1830.

Greville, Robert Kaye, Esq. LL.D. F.L.S. F.R.S., and F.A.S.E. : *Algæ Britannicæ*; or, Descriptions of the Marine and other inarticulated Plants of the British Islands belonging to the order *Algæ*, with Plates illustrative of the Genera. London. 1 vol. 8vo, 19 coloured plates. 2l. 2s. extra-boards.

This admirably executed work, of great interest to all who reside by the sea-shore, and especially to ladies who delight in walking on the margin of the deep, we shall review at length as soon as we can find room; but, as we shall have nothing but good to say of it, our review will consist chiefly of extracts.

Tyso, the Reverend Joseph, Wallingford, Berks : A select Catalogue for 1829 and 1830, of Choice Ranunculuses grown and sold for benevolent Purposes. One sheet, which may be sent by post. 6d.

This Catalogue contains an astonishing number of names, which the author says he has occupied himself for the last twenty years in selecting from upwards of six hundred named sorts. For our opinion of the Catalogue we refer to Vol. V. p. 383.

Law, the Reverend James Thomas, Chancellor of Litchfield and Coventry : The Poor Man's Gardener; or, a few brief Rules for regulating the Allotments of Land to the Poor, for Potato Gardens. With Remarks, addressed to Mr. Malthus, Mr. Sadler, and the Political Economists; and a Reference to the Opinions of Dr. Adam Smith in his *Wealth of Nations*. London. Rivington. 1830.

Widely indeed does this author differ from us in his idea of the comforts to which the poor are entitled; from which the lesson which the poor have to learn is, that they must take care of themselves. If clergymen, in addition to their spiritual duties, would attend a little more to the things of the body, and instruct their hearers in matters of natural science and political economy, as Dr. Chalmers does (p. 344.), and proposes to others, they would do them much real service. By having their attention exclusively directed to a world to come, they are diverted from their temporal miseries here, and taught to linger on in suffering, as if it were a condition of their existence, and a sort of penance to insure future happiness, instead of exerting themselves to improve their worldly circumstances.

Loudon, J. C., assisted by Mr. Elles, Mr. Pringle, Mr. Gorrie, Mr. Taylor, and others : A Manual of Cottage Gardening, Husbandry, and Architecture, &c. London. 8vo. 1s. 6d. Charlwood, Great Russel Street, Covent Garden.

Our readers have perused this work in our last Number (p. 139. to 209.); we insert the title here merely because we have printed a few copies to be sold at cost, for those who choose to give them away to their poorer neighbours.

Doyle, Mr. Martin : Hints originally intended for the small Farmers of the County of Wexford; but suited to the Circumstances of many Parts of Ireland. Dublin. 18mo. pp. 100. 1 plate. 1s. Published at the especial desire of the North and South Wexford Agricultural Associations.

These Hints are written in a familiar style, for the perusal of farmers of from 10 to 50 acres, or upwards; whether the occupiers of such farms are in a state to improve from them we have little means of judging. "In every

part of the country," the author observes, "unless in those favoured spots where kind-hearted and valuable landlords goad their tenant into improvement," the cabins of small holders are unfit to be seen. He asks, whence does this arise? and answers, "from early habits of slovenliness, bad management, and poverty." (p. 11.) The plan of the small holder's cottage and farm-yard, the whole covering a space of 36 ft. by 55 ft. is better than we should have expected; but we should have preferred placing the cottage on a raised platform, or rising to it by three or four steps.

Berry, the Reverend Henry: Improved Short-horns, and their Pretensions stated; being an Account of this celebrated Breed of Cattle, derived from authentic Sources. To which is added, an Enquiry as to their Value for General Purposes, placed in Competition with the improved Herefords. London. Pamph. 8vo, second edition. 1830.

Davey, John, Esq. Bath: Observations on the Disease which has lately been so destructive to Sheep, called Bane or Coath; particularising the Causes, and minutely describing the Modes of effecting its Cure; and pointing out those Means which ought to be adopted to prevent its Recurrence. Bath. Pamph. 8vo. 2s. 6d. 1830.

Jennings, James, Esq., Author of the *Family Cyclopædia*, &c.: A Practical Treatise on the History, Medical Properties, and Cultivation of Tobacco. London. 12mo. 4s. 6d.

This is a little book of very agreeable gossip, mixed up with poetry borrowed and original. If the author had seen Tatham's *Historical and Practical Essay*, and made use of that, as well as of Carver's *Treatise*, in compiling his section on cultivation, he might have produced a much more useful book. He ought also to have seen Brodigan's work, which appeared at least two months before that now under notice, and taken up the subject of the cultivation of tobacco in Ireland. The chief difficulty attending the culture of tobacco in Britain will be found in the fermenting and curing, which we do not think can ever be done properly without the aid of artificial heat; but were the cultivation free, this difficulty and every other, except that of climate, would soon be got over; at least if to get over them were found worth while.

The Servant's Guide, and Family Manual. Limbird. 1 vol. 8vo. 5s.

A very useful little work, which will at once serve as a cookery book, a guide for every description of servants, and a valuable assistant to the head of every family. We shall recommend this book every where, if it were only for the sake of the excellent suggestions on the "self-improvement" of house-servants. (p. 253.)

FRANCE.

Desfontaines, R., of the Academy of Sciences, Professor of Botany in the Paris Garden: *Catalogus Plantarum Horti Regii Parisiensis, cum Annotationibus de Plantis novis aut minus cognitis.* Paris. 1829. 8vo, third edition. 7 frs.

The arrangement is Jussieuean, commencing with Monocotylédones, and including under that class:—Ordo I. Filices; II. Rhizospermæ (*Pilularia* and *Marsilea*); III. *Equisetaceæ* (*Equisetum*); and IV. *Naiadeæ*; these orders being considered by Desfontaines, and some other botanists, as belonging more to Monocotylédones than Acotylédones. The systematic names of the species only are given, without the French names; but the systematic synonymes are added, and one or two references to good figures, with the native country; the duration is designated by the usual signs of annual, biennial, and perennial, and those of shrubby habit by the usual sign. The words econ. (economical), med. (medicinal), orn. (ornamental), ven. (venomous) cald. (caldarium) and temp. (c. temperatum) for the stove and green-house, are also added. The reason given for

not adding the French names is, that they are too variable and too uncertain; but we are informed that they may be found in the second edition, of which some copies remain at 2*frs.* 50 *cents.* Such a catalogue as the last will be useful to English residents in France; this Latin one will be of use to botanists. The notes, to which allusion is made in the titlepage, are very few, and chiefly technical descriptions. The number of natural orders illustrated is 124, and the number of species, estimating from an average of five pages, appears to be 9500, or perhaps 10,000. The number of natural orders which can be illustrated by British collections, as enumerated in our *Hortus Británnicus*, amounts to 219, and the number of species, exclusive of Cryptogámia, to 25,902. Neither the genera nor species are numbered, nor is there a table given of the arrangement; the most valuable parts of the Catalogue are the references to figures and the synonymes.

Journal de la Société d'Agronomie pratique (auquel s'est réuni Le Journal des Jardins). Août, 1829. Paris. In 8vo Numbers, monthly. 10 *frs.* per annum.

We shall give what may be worthy of notice in this work, and also in the *Journal des Jardins*, both before us, as soon as we can find room. In the *Journal d'Agronomie* for August, 1829, we are informed that M. Noiset, the nurseryman, is giving a course of lectures on dendrology to the members of the Society, and to all who choose to attend, every Sunday morning at seven o'clock. The order he follows, in treating of the trees, is that of the natural system, and he began with *Rosaceæ*, as being the richest in fruits.

Annales de l'Institut Horticole de Fromont. In 8vo Numbers, monthly.

The institution at Fromont for practical gardeners was opened on the 14th of May, 1829, and eleven numbers of the *Annales* have since been published. The Chevalier Soulange Bodin, his gardeners, pupils, and workmen, the evening before the opening of the Institution, assisted at a solemn mass got up in the parish church with reference to this occasion. A great many horticulturists arrived from the capital to partake of the fête given at the château of Fromont, and to deliver speeches on the importance of horticulture, and the advantages which it will derive from the institution of Fromont. These speeches occupy nearly the whole of the second livraison, and are sufficiently amusing by being so thoroughly French.

ART. III. *Literary Notices.*

MR. LINDLEY, we understand, has been for some time past occupied with an *Introduction to the Natural System of Botany*. This work, when published, will be most invaluable for gardeners. The extraordinary success which Mr. Lindley had in teaching this system last summer at the London University, has converted to it some of the most obdurate Linneans; and those are now the greatest advocates of the natural system, who, fifteen months ago, prophesied a complete failure if this mode were attempted to be taught in the university.

A Pamphlet on *Planting* is in the press at Perth, which a friend of ours in that quarter informs us will contain some curious and interesting matter.

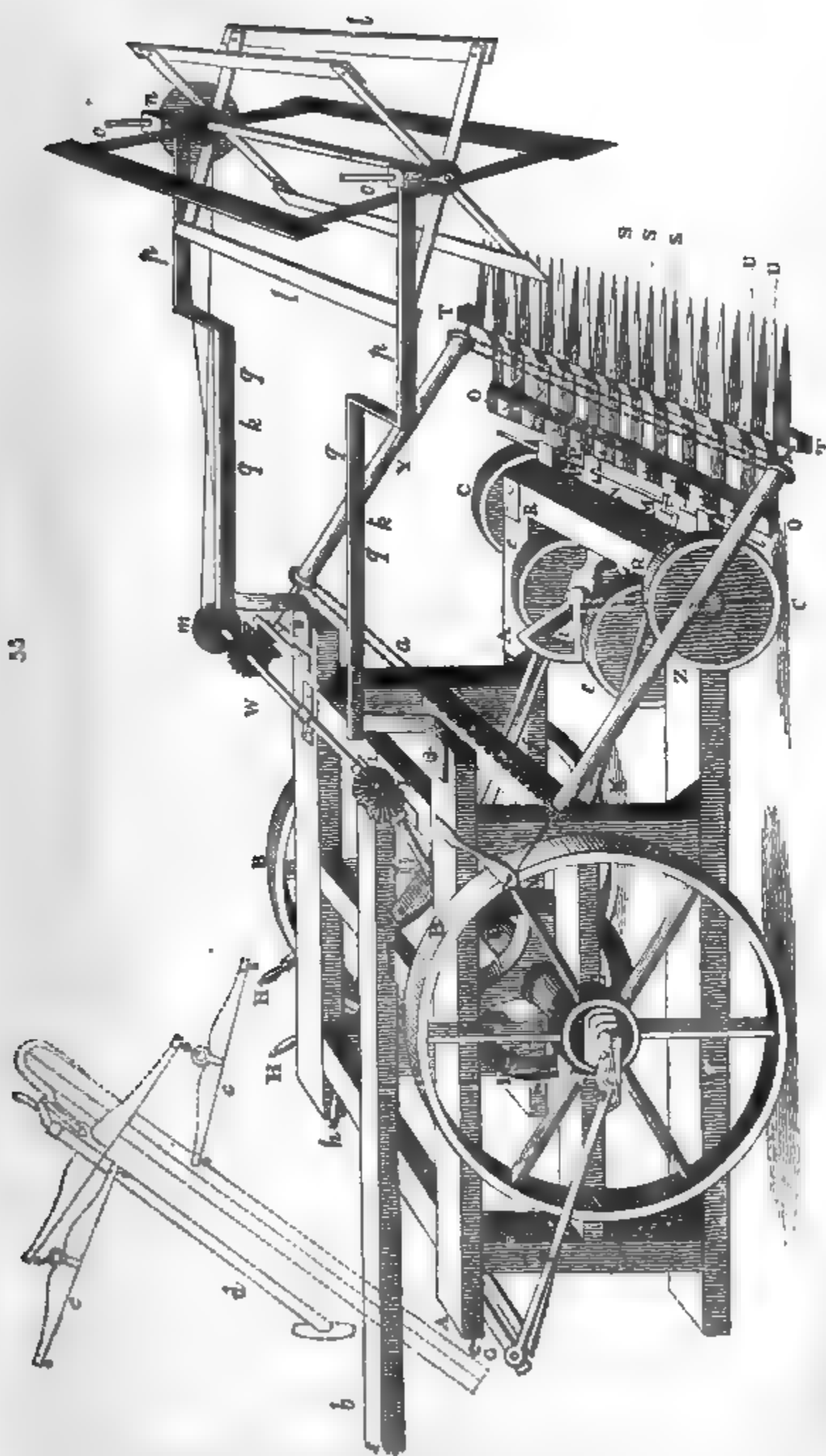
A second edition of *Felton's Portraits of English Authors on Gardening*, greatly enlarged, is about to appear. A copy has been sent by our excellent and much esteemed friend the author, which we have sent to be reviewed to a quarter from which, if we are not mistaken, some new light will be thrown on the history of one of our very first gardening authors, certainly in landscape-gardening the very first.

PART III.

MISCELLANEOUS INTELLIGENCE.

ART. I. *General Notices.*

BELL's Reaping Machine. (*figs. 55, 56.*)—Sir, At your request, I now set myself down to draw up a description of the reaping machine for your *Encyclopædia of Agriculture*. The difficulty of making such an implement thoroughly understood, from a plate and description, by the ordinary reader, is, if possible, very great; but, to the intelligent and to the aspiring mechanic, I flatter myself that, by minuteness and order in the delineation, the principal features of the machine shall be sufficiently developed so as to give an accurate idea of its principle, and of the strength of material sufficient to apply that principle to practice. In certain pieces of machinery, such as the threshing machine, it is customary to draw it without the necessary frame-work; and, in such engines, that is, doubtless, the preferable way: but in such an implement as the reaping machine, the frame constitutes no inconsiderable part, and, without it, the drawing would be both ludicrous and unintelligible. Therefore, although the numerous beams in the frame unavoidably create a considerable confusion in the drawing, and conceal, almost or entirely, from the view of the reader, some of the important parts of the machine, I consider it the better way to insert them, making the concealed parts as intelligible as possible by minute description. Without further preamble, I would observe, that it is of no particular consequence of what form the frame may be made: it may either be similar to that in the plate, or of any other form the proprietor or maker may conceive best adapted for fixing the several parts together, and which, from its symmetry, may be best calculated to please the eye of an agriculturist. One thing, however, must never be lost sight of, in whatever form it may be made,—that every part must be firmly united, and the beams placed in such a manner as shall resist the greatest strain, with the least possible quantity of material. The form in the drawing (*figs. 55, 56.*) is the original design; but, this season, the machines constructed under my inspection are considerably different in the construction of their frames. They have a straight beam fixed to the lower rail, upon which the cutters are screwed, passing with an angle above the main axle of the machine, and terminating at the upper corner, where the last of the three rails on the top of the machine is fixed. This form of frame requires considerably less weight of wood, but it is, perhaps, objectionable in two respects: the machines are too light behind, and they require a larger quantity of iron mounting. This alteration in the form of the frame, in the eyes of some, gives the machine a neater appearance, and it is, upon the whole, a little lighter. The frame-work (*A A*) being thus explained, *B B* and *C C* are four wheels upon which it is mounted, of whatever form it is made; *B B* have their spokes at right angles to their naves, and are $3\frac{1}{2}$ ft. diameter. For neatness' sake the naves are made of cast iron; the wheels are from 5 to 6 in. broad at the rims, and are surrounded with a slight hoop of iron. Were they made narrower in the rims, when the ground was soft they would both cut it and drag, without giving motion to the connected parts of the machinery. The small wheels *C C*, which support the front of the frame, are



The Rev. James Crockett, M.A.,

(like the large ones *B B*) made of wood: they are 14 in. in diameter, and 6 in. broad at the rims, with a very slight hoop of iron round them. Their axles, which are of iron, are screwed to the frame, and are about $1\frac{1}{2}$ in. in diameter. The wheels are placed as near the front of the frame as possible, the reason for which will appear when the general description of the machine is given. The wheels *B B* are connected with the main axle *D*, in such a manner as that they may turn upon it, similarly to a carriage-wheel, without moving the axle with them; or they can be fixed to it at pleasure, so as to turn it round with them as occasion requires. For this purpose, the holes in the naves are circular; and of course so much of the axle as passes through them is round. There are cross flanges, cast upon the nave, which catch hold of the coupling box *E* when the machinery is to be moved, and are disengaged from it by the handle *F* when the machine is going without moving the machinery. In the drawing this part of the apparatus is entirely concealed at one of the wheels, except a small portion of the handle at *H*. The other coupling box is but faintly represented at *E*. The handle *F* has a joint in it, which is fixed to the other half of it, which passes through the frame of the machine, and terminates with the handle *H*; so that both coupling boxes can be managed by the driver, standing at *H*, although they are on opposite sides of the frame. The main axle *D* is $3\frac{1}{2}$ ft. long between the shoulders, and 8 in. from the shoulders to the coupling box: the frame of the machine is 4 ft. broad, by 7 ft. long. Fixed upon the main axle *D* is the beveled wheel *I* of 60 teeth, part of which is seen in the plate. This beveled wheel moves two pinions of ten teeth each. These pinions are concealed in the plate by the frame of the machine: one of them turns the crank-rod *K*, and the other gives motion to the coupling wheels *L L* upon the top of the frame. The crank-rod *K* being thus put in motion as the machine moves forward, the crank *M*, which gives motion to the cutters, revolves with a uniform and steady motion. *N* is a coupling strap of iron, which connects the crank *M* and the movable bar *O O* together, which is kept in its place by means of the sliding hooks *P P* working in the brass sockets *Q Q*, which are screwed upon the strong iron supports *R R*. It is obvious that as the crank *M* revolves, it will, by pulling the connecting rod *N*, give a perpetual motion backwards and forwards to the movable bar *O O*. In order that there may be as little friction as possible to the movable bar *O O*, there are two friction pulleys fixed to the iron supports *R R*, upon which the movable bar *O O* rests. These are not seen in the plate, as they are placed immediately below the bar; but to any person who considers the thing attentively, they must be readily understood. They are of the greatest consequence, as the back parts of the cutters wholly rest upon the movable bar *O O*; and from the spring which each cutter must necessarily have, the pressure upon it is very considerable.

With respect to the cutters, it may here be remarked that the greater body of them is made of iron, edged with the best of steel, hardened as much as they will bear, without breaking out into chips when the machine is in operation. The cutter-bar (that is, the bar upon which the cutters are screwed) is strongly screwed upon the extremities of the supports *R R*, and is 6 ft. long by 3 in. broad, and three fourths of an inch thick. The lower or fixed cutters *S S S* are made triangular, of solid iron, edged with steel, as before mentioned: they are 15 in. long from the point to the extremity, 4 in. broad at the base, and nearly one fourth of an inch thick: they are steeled only to the front of the bar, thus leaving a steeled edge of about one foot. In the middle of the base of the cutter there is a hole pierced, half an inch in diameter, and a corresponding one in the bar where it is to be placed. The hole in the bar is screwed; and, in fixing a cutter, a bolt is passed through the hole in the base, and screwed tightly down into the bar. To prevent a cutter from shifting its place, there are other two small holes pierced, one on each side of the half-inch hole in the base, and correspond-

ing ones in the centre of the bar : these holes are one fourth of an inch in diameter. Into the holes in the bar there are two iron pins firmly riveted below, and left one eighth of an inch above the bar, made to fit neatly into the holes in the cutters, although with a sufficiency of looseness to allow the cutter to be taken easily off when the bolt in the middle is screwed out. By this means, when the bolt in the middle is screwed down, a firm and unalterable position is insured to the under cutter.

The upper cutters *U U*, &c., like the under ones, are made of good iron, edged with steel, as far back as the hole where the bolts upon which they turn pass through. They are 3 in. broad where the hole is pierced ; and, behind the cutter-bar, as is seen in the plate, they are bent down about 2 in., to allow the rollers and canvass to operate, as shall be afterwards described. After being continued horizontally about 3 in., they are again bent up, and their extremities placed above the movable bar. They are made about $13\frac{1}{2}$ in. long from the point to the hole, and about $7\frac{1}{2}$ in. from the hole to the extremity backwards. Both upper and under cutters are sharpened on both sides, similarly to a pair of scissors ; the under ones, of course, upon the upper side, and the upper ones upon the lower side ; thus forming, when the cutters are screwed to their places, a perpetual cutter upon that principle. The bolts upon which the upper or movable cutters work are half an inch in diameter, and are screwed to the bar through a hole of corresponding breadth : they are made to go through the bar about half an inch, upon which a nut is screwed, to prevent the bolts from unscrewing, which they would otherwise do, from the moving of the cutters ; which would allow the edges of the cutters to separate, and of course the machine would get deranged, and would not operate. The points of the under or fixed cutters are 6 in. separate ; of course the holes in the bar, by which they are fixed, are 6 in. apart. The bolts of the upper or movable cutters are intermediate, that is, 3 in. from the others ; so that the cutter-bar is bored from end to end with holes half an inch in diameter, and 3 in. distant. The small holes, with the pins which prevent the fixed cutters from shifting their places, are each $1\frac{1}{2}$ in. from the large holes ; so that the bar, before the cutters are screwed upon it, is pierced first with a small hole, then a large one, then two small ones, then a large one, then two small ones, &c., as may be understood from the plate ; each hole $1\frac{1}{2}$ in. apart.

The back parts of the movable cutters, as was already mentioned, rest upon the movable bar ; and on each side of every cutter there is an iron pin, of one fourth of an inch in diameter, riveted into the movable bar. By means of these pins, it is easily seen, from the consideration of the plate, that, as the movable bar is pushed backwards and forwards by the crank *M* upon the friction pulleys below it, the movable cutters will have a perpetual motion backwards and forwards. Under the heads of the bolts which fasten the movable cutters, and the cutters themselves, there is placed a washer of brass, to diminish the friction as much as possible ; and, for the admission of oil, there are two small holes pierced in the head of each bolt. There are twelve movable cutters, and thirteen fixed ones, with intervals of 6 in. between the points of the latter ; so that the breadth of the machine is exactly 6 ft : but this breadth, from the principle of the machine, may be either increased or diminished, according to the nature of the farm upon which the machine is intended to operate. Upon a perfectly level farm the machine might be made broader ; but upon a farm of sloping or uneven surface, one of 6 ft. in breadth will be found to be work enough for two horses.

As it was before stated, the beveled wheel *1* gives motion to the coupling wheels *L L*, of 18 teeth each ; these move the horizontal shaft *v*, and the wheel *w*, which is fixed to the end of it. The wheel *w* has 36 teeth ; and the pinion *x*, which it turns, and which is fixed upon the gudgeon of the roller *y*, has 18 teeth. This part, however, is misrepresented in the drawing, which was taken from a model which had the rollers turned by coupling wheels, as

shown in the plate. The one roller (y) turn the other (z) by the pitch-chains (a a), the chief use of which is to keep the sheet of canvass from changing its place by the revolution of the rollers. The canvass, from its gravity, would slip down upon the rollers as the machine moved forward; and it would twist upon them, by the unequal pressure to which it is exposed, by the cut corn pressing unequally upon it. To prevent these derangements, there are loops fixed to the canvass, which are made fast to the links of the chain, about 6 in. apart; and there being an equal number of links in both the upper and lower chains, and an equal number of teeth in the four pulleys upon which they work, the canvass revolves uniformly, without being in the least deranged by the many casualties to which it is exposed. *b* is the pole to which the horses are yoked: it is made of wood, and is firmly fixed to the cross rails upon the top of the frame: its length is 10 ft. from its extremity to the frame of the machine. *c c* are the swingletrees by which the horses are yoked: they are yoked similarly to horses in a carriage, so as both to draw forward, or push backward, at pleasure. Their heads, of course, are towards the machine; and, in appearance, they push the machine before them, but, in reality, they are drawing the same as in the plough. *d* is a small rod of wood, or *helm*, which the driver holds in his right hand, by the pulling of which to him, or pushing it from him, he conducts the machine straight forward. The dotted lines in the plate are a continuation of the pole with the swingletrees and helm attached. The machine is turned, at the end of the ridge, by the following contrivance:—The two wheels *e e*, in the body of the machine, are joined to the lever *f f* by an upright movable axle. The wheels are similar to the two (*c c*) on the front of the frame: they have a strong iron axle, which is made so long as to let the wheels conveniently turn, between the crank-rod *k* and the frame of the machine. In order that this piece of the apparatus may be used with advantage, the beveled wheel *i* is not placed upon the middle of the main axle *D*, but about 1 ft. from the end of it, as is seen in the drawing. This throws the crank-rod *k* nearer the side of the machine, thus leaving plenty of space for the turning apparatus. In the middle of the horizontal axle of the wheels *e e* there is an upright standard of iron, sufficiently strong, and firmly joined to the horizontal axle. This upright standard or axle passes through the middle of the lever *f f* (which is of wood, and, at this part, about 5 in. square), about 20 in. from the end of it. Upon the top of the upright standard there is placed a segment of a wheel *i*, with the teeth on the lower side, which is worked by a small pinion of 6 teeth upon the end of the rod *g g*. This pinion is not seen in the drawing, as it is completely concealed by the segment *i*. The rod *g g*, and the small pinion upon it, are turned round by the handle *h*; the pinion moves the segment *i*, which, being firmly fixed to the upright standard, turns the small wheels *e e* either way. When the machine is cutting, the wheels *e e* are put parallel to the cutters, and in this position they assist the machine in passing a furrow, without allowing the cutters to come in contact with the opposite side of it. But, when the machine is to be turned round, they are turned with an angle to the path of the machine by the handle *h*; and the rod *g g* being fixed in that position by a screw near the handle, the lever is then pressed down, and fixed with a *catch* to the frame of the machine. In pressing down the lever *f f*, the small wheels *e e*, which before were about 2 in. from the ground, are pressed to the earth, about 2 or 3 in. below the natural level of the machine. Of course, the two front wheels *c c* are lifted 2 or 3 in. from the ground, and the cutters considerably more, thus insuring them from accident while turning round. The machine now rests upon the two large wheels *B B*, and the two small ones *e e* of the lever; and the two front wheels *c c* go for nothing, as they do not touch the ground. But the axle of the small wheels *e e* being placed with an angle to the main axle *D* of the large wheels *B B*, the machine will naturally turn round upon the horses being moved slowly forward: of course, the greater the angle formed by the

two axles, the less space will the machine require to turn upon. In turning the machine, however, attention must always be given to disengage the large wheels *B B* from the main axle *D* : this is done by shifting the coupling boxes *E E* by means of the handles *H H*. The apparatus *ll*, or collector, is placed exactly above the cutters : it is $2\frac{1}{2}$ ft. in diameter, made of wood as slight as may be. The supports *k k*, in the original machine, were made of iron ; but now the two side-beams of the machine are made of a piece of wood, with a natural cast upon it, similar to the beam of a plough, but rising with a much greater angle, as near the form of the iron supports in the plate as possible, and continued horizontally till their points are exactly above the movable bar *o o*. The points *p p* are made of iron, bent as in the plate, to allow the collector *ll* to turn round. At *q q q q* are strong iron screws, working in nuts placed in the wooden part of the supports, which serve the double purpose of uniting the iron part to the wood, and allowing it to be drawn forward, or pushed backward, as occasion may be, by either shifting to another hole, or, which is better, by long slips in the middle of the bar. Long corn requires the collector to be placed forward, and short corn requires it to be taken back. At *o o* are two perpendicular rods, which slip in holes in the points of the supports ; by the moving of which, upwards or downwards, the collector *ll*, which turns in sockets in the lower ends of these rods, is lowered or heightened, according to the length of the corn to be cut. The rods are fixed in their places by screws in the end of the supports. The collector is turned by a cross belt, or chain, passing over the two pulleys *m n*. A piece of slight canvass is put round the rollers *y z*, fixed to the chains *a a*, as before described. The lower ends of the rollers have a shield of plate iron round their gudgeons, to prevent the cut corn from warping, which it does effectually. The bushes of the roller *z* are made to shift by screws, to tighten the chains a little, to prevent them from slipping the pulleys, as they lengthen a little by using, especially when new.

Fig. 56. is a representation of the machine in full operation. About six or eight yards of the field require to be cut at the ends to allow the machine to turn without injuring the corn, which may be done by the machine itself. If the corn is standing nearly upright, a convenient number of ridges may be taken in and cut by going round them ; but if the corn is standing, and the field free from deep furrows, it may be cut by going round and round it till it is finished in the middle. One man, as seen in the plate, is sufficient to manage the whole operation.

The cutting, collecting, and laying are the three principal parts of this machine, which have been all more or less explained in the general description given above. But as they are particular, a few words on each of these heads may still be necessary, that the machine may be completely understood in all its bearings. First, then, with regard to the cutting : it is desirable that the machine should do its work, and nothing more. If the motion of the cutters were too slow, it would not clear the ground ; and if it were too quick, there would be a useless expenditure of power and machinery. Let it be remembered that the large outer wheels *B B* are $3\frac{1}{2}$ ft. diameter ; that the beveled wheel *i* has 60 teeth, and that the crank-rod pinion has 10 ; and that the cutters have 12 in. of a cutting edge. The diameter of the wheels *B B* being $3\frac{1}{2}$ ft. or 42 in., their circumferences are 131·94678 in. ; every revolution of them will pass over nearly 132 in. of the ground's surface ; but there being 10 teeth in the crank-rod pinion, and 60 in the beveled wheel *i*, every revolution of the wheels *B B* will turn the crank-pinion 6 times, and, of course, the crank as often. But every turn of the crank-pinion gives two cuts, and each stroke of the cutters clears 12 in. of the ground, because they have 12 in. of a cutting edge : therefore, one revolution of the wheels *B B* gives 12 strokes of the cutters, and clears 12 times 12 or 144 in. of the surface of the ground. But one revolution of *B B* passes only over 132 in. of surface ; therefore, the cutters are calculated to cut, in one revolution of *B B*,

12 in. more than enough, that is, 1 in. each stroke. This, however, is perhaps nothing more than is advisable to calculate upon, making allowances for the operation of the machinery, the partial dragging of the wheels, &c. &c. Secondly, the collector *ll* must not move too slowly, lest it should retard the corn from falling upon the canvass; and it must not move too quickly, lest it should shake ripe grain. As before stated, it is $2\frac{1}{2}$ ft. in diameter, that is 94.2477 in. in circumference. But one revolution of *BB* passes over 132 in. of surface; therefore, that the collector *ll* may just touch the corn, without bringing it back, or retarding it from naturally falling back, it must make 1.4 revolutions for every one that *BB* makes. Since there are 6 arms in *ll*, every arm will touch the standing corn at equal distances of 15.7 in. The pulley *m* makes 6 revolutions for 1 that *BB* makes: it is 6 in. in diameter, and the pulley *n*, upon the axle of *ll*, is 9 in.; therefore *m* revolves 1.5 times for once that *n* turns round, and the collector *ll* revolves 4 times for once that the large wheels *BB* revolve. But $4 \times 94.2477 = 376.99$ in., the space passed through by the circumference of the collector, while the machine moves forward only 132, the difference of which is 244.99, the space that the collector passes over more than the machine, during one revolution of *BB*. Therefore, every inch of the corn is brought back 1.54 in. nearly, by the collector, which is sufficient to insure its falling backwards upon the canvass; and yet it touches the corn so gently, that it is impossible that it can injure it in the smallest degree. A quicker and a slower motion, however, is advisable; which is easily given, by having two or three sheaves upon the pulleys *m* and *n*; and then, by shifting the belt, a different motion is produced. With regard to the canvass, it is necessary that it should revolve as much as the ground passed over by the machine; that is, while the wheels *BB* make one revolution, or pass over 132 in. of the surface, 132 in. at least of canvass should pass over the rollers. *w*, as before stated, has 36 teeth, and *x* 18, so that the roller *y* will give two revolutions for one of *w*. But *w* revolves 6 times for 1 revolution of the wheels *BB*: hence the roller *y* will revolve 12 times for every revolution of *BB*. The diameter of the rollers is 4 in.; their circumferences, therefore, are nearly 12.56 in., 12 revolutions of which will give 150.72 in. As before stated, one revolution of *BB* gives only 132 in., wherefore there is a preponderance of motion, on the side of the canvass, of 18.72 in. for every revolution of *BB*. This velocity is necessary to insure the canvass of clearing itself in all cases; and, with a smart velocity, the cut corn is laid down with a greater angle to the path of the machine. It may here be observed, that it is often found convenient to have the canvass to lay down the corn on either side of the machine, according to the direction from which the wind is blowing. This may be done with a double wheel at *x*, with a handle in the usual method employed for reversing the motion of the rollers of the threshing machine. It were desirable, too, if possible, to have the canvass besmeared with a drying oil or gum, or some other substance which would prevent it from contracting with moisture: as the slightest shower, or dew of a morning, contracts it so much, as to render the implement useless until the corn is perfectly dry. This will form one of the improvements for next season. — *Patrick Bell. Mid Loth, Aucherhouse, January 16. 1830.*

This reaping machine was invented by Mr. Bell, a young clergyman, in the early part of 1828; it was tried in the autumn of the same year in Forfarshire, and, as we have already stated (Vol. V. p. 600.), was found to do its work in a most efficient manner, and to be on the whole, by far the most perfect reaping machine that had hitherto been invented; though constructed, as the editor of the *Quarterly Journal of Agriculture* states, at a very short notice, in consequence of his request.

It was tried again in October 1829, and the following are some of the reports of the trials then made, which Mr. Bell, to whom we are under the greatest obligations for his ample descriptions and drawings, has furnished

us at our request. We agree with some of the reporters, that few men deserve better of his country, and indeed, of every civilised country where agriculture is practised, than Mr. Bell; for surely that invention must ultimately be of great benefit to men and women, which enables them to do by horses, oxen, or steam, that which they have hitherto done by a most severe description of manual labour, rendered doubly oppressive by the season of the year in which it must necessarily be performed.

Report No. 1. — We, the subscribers, members of the Highland Society, and others, having witnessed Mr. Patrick Bell's reaping machine, employed in cutting down barley and oats, at Grey-stone, in the parish of Monckie, Forfarshire, on the 16th of September, 1829, beg leave to express our entire satisfaction with the manner in which the work was performed. The barley was thin, rather a light crop, and though not wholly lodged, yet from the state of the weather, many of the plants were broken down in different directions. It was, however, cut by the machine, and laid in a regular manner, without a single ear being left behind, and the work was much more neatly executed than by any of the implements at present in use. The oats were a very heavy crop, and generally lodged; and it was supposed by every spectator that every attempt to cut them by a machine would prove entirely useless. The execution, however, was admirable; the stubble was equally cut, and the corn was laid in a straight continuous line, which could be collected with the greatest facility and despatch. Owing to the state of the crops, the machine could cut only in one direction, yet in half an hour it cut down 1 rood 21 falls Scotch measure. We understand that when the crop is not much laid by the weather, the machine will cut both going and returning; and in that case the rate will be $1\frac{1}{2}$ acres per hour. Six persons are necessary to accompany the machine when operating, as witnessed by us, and a considerable portion of them may be women and children. The machine exhibited to us was 6 ft. broad, it was drawn by two horses, and they seemed to move and exert themselves much in the same manner as when going in the plough.

Having made this statement of facts, we consider it altogether unnecessary to refer to the many and valuable advantages that would result from the introduction of such a machine into common use, as it will be readily acknowledged that the expense of harvest work would thus be greatly reduced, the inconvenience of obtaining and accommodating reapers greatly lessened, and the crop secured with much less danger from the weather. Besides the neatness and despatch with which the work was executed, we cannot omit to mention two advantages that seem to be peculiar to this machine: — it cuts and removes the corn to its place so gently, that there is no danger of shaking, even in potato oats come to full maturity, and the cutters being in the form of scissors, do not require to be sharpened, perhaps, in the course of a whole harvest. Fully satisfied ourselves of the utility of the invention, and of the immense benefit it will confer on agriculture, we humbly recommend to the Highland Society of Scotland to extend their patronage to this machine; to take the steps necessary for introducing it into general use, and remunerating Mr. Bell for the merit of the discovery, as well as for the labour and expense to which he has submitted for the public good.

(Signed by a great many gentlemen and practical agriculturists, who witnessed the operation.)

No. 3. — The following is a report from three joint proprietors of one of these machines: —

We, the subscribers, having got one of Mr. P. Bell's reaping machines, beg leave to express our decided approbation of the work performed by it. From the advanced state of the harvest before the machine was got ready, we cannot state accurately the quantity that may be cut in a day; but from repeated trials that we made upon oats on the farm of Reedytees, near Auchtermuchty, Fifeshire, we should suppose it capable of cutting one Scotch acre in the hour. The trials were made before a number of practical agriculturalists, who all expressed themselves completely satisfied that the machine was calculated to perform the work to their entire satisfaction.

The cutting is neatly performed, and not an ear left along the path of the machine, nor yet the least loss of grains by the shaking of the ears observable, although the oats were too ripe; being kept for the express purpose of exhibiting the machine; and the corn was laid in an even regular line, quite easily taken up, and put into sheaves, and, by the smallest attention, so clean, that no raking after it is required. It is our decided opinion that the machine will soon come into general use.

(Signed)

GEORGE BUTCHART, Lumbenny.

ROBT. BUTCHART, Broomblae.

JAMES ROBERTSON, Reedytees.

Oct. 6. 1829.

No. 6. — The following is from an extensive farmer in Perthshire, who had a machine this season for his own use: —

Dear Sir,

Mains of Fawlis Easter, Oct. 2. 1829.

I have made a full trial of your reaping machine, by cutting wheat, barley, and oats with it this season, and am happy to state that I am fully convinced the machine will answer the purpose, and be a great saving to the corn farmer. The machine will cut from eight to ten acres a day, when the corn is standing and the ground even; and it is so laid down, that it can be taken up and put into sheaves more evenly than it is generally done with the hand and sickle, and I think at about half the expense. From the experience I have had, I am convinced that the reaping machine will be found a very useful implement to corn farmers; and I have no doubt it will soon be as general and as useful as the threshing machine now is. It is my opinion that a pair of horses would be able to work it upon level ground, although it were a foot or two broader.

The Rev. P. Bell, &c.

(Signed)

THOMAS SMITH.

Mr. Smith was so good as to obtain the signatures of thirteen of his neighbours, who witnessed his machine working, who all willingly subscribed his report. They are agriculturists of first-rate standing in his neighbourhood, the greater part of them from the Carse of Gowrie.

No. 7. — The following letter is from an intimate friend of mine, who is a very extensive farmer in the neighbourhood of Dundee. He has no machine as yet of his own; but my machine, on its way to Grey-stone, the day before the exhibition, having to pass through his farm, he had it taken from the cart, and put to work amongst a field of wheat.

Dear Sir,

Morroes, Nov. 2. 1829.

As you had the goodness to allow your newly invented reaping machine to be tried on my farm, on the 19th of September last, I have great pleasure in stating to you the result. The work

performed was in a field of struggling wheat, in some parts considerably laid, yet the work was executed in a style far surpassing any thing I had ever seen. The wheat was cut and laid in such a way that there was no difficulty of gathering it up, binding it into neat sheaves, and leaving a clean and neat stubble without raking. From the trial made, it appeared to me that the machine (if the grain could have been cut both ways) would have cut fully an acre per hour, and the gathering, binding, and setting could have been performed by eight or ten people; and I may further state, that the two horses seemed to work as easily as in the plough. Upon the whole, I am convinced that your reaping machine will soon come into general use, and will at least be equal in utility to the threshing mill.

The Rev. P. Bell, &c.

(Signed)

GEORGE ARSLAY.

No. 8. — After having given you the opinions of these agriculturists, I conceive I may, without being accused of affectation, subjoin what passed under my own eyes, on my father's farm. That almost unprecedented storm, which, I believe, was general over at least the whole of Great Britain, on the 1st or 2d of August, bent the whole of the standing corn in this neighbourhood so much to the south, that they never again regained their upright position. This circumstance was a considerable obstacle in the way of our field labours, as, from the principle of the machine, she could cut only in going to the north or west, and in returning we were obliged to allow her to go empty; thus performing only half the work the implement was capable of doing, if the crop had been standing nearly upright. This circumstance, however, has no other effect than to diminish the quantity cut, as by cutting in one direction, she will take up the grain, although lying almost flat upon the earth's surface.

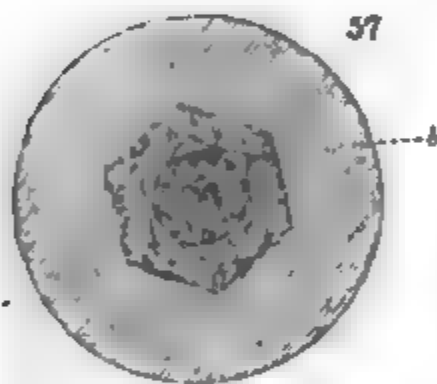
We managed this season to cut the whole of my father's farm, with the exception of corners and patches, where no machine could operate, in a manner surpassing my most sanguine expectations. The implement both did its work well, and was easily managed; and any horse will work in it. The greatest quantity we cut in a day was about six acres Scotch measure, this was oats, and cut after nine o'clock in the morning. It required nine people to gather, bind, and stack. This, you will observe, was only half work.

J. C. Loudon, Esq. &c.

I am, Sir, &c.

PATRICK BELL.

A great Improvement in the Construction of Axles for carriages, carts, and waggons, has been made by George Burges, Esq. M. P., of Cambridge.



Instead of one circle moving within another, as in all common axles; or one circle moving within another, this other having grooves for retaining oil, in the manner of the patent axles; Mr. Burges's axle is a circle (fig. 57. a) moving within six points formed by six equal convex segments, which hold oil in their angles (b). The friction is thus reduced to a minimum in theory; and, with case-hardened iron and abundance of oil, we should think it could not be otherwise in practice. Mr.

Burges has had the axles of his own carriage constructed in this way for some years. — *Cont.*

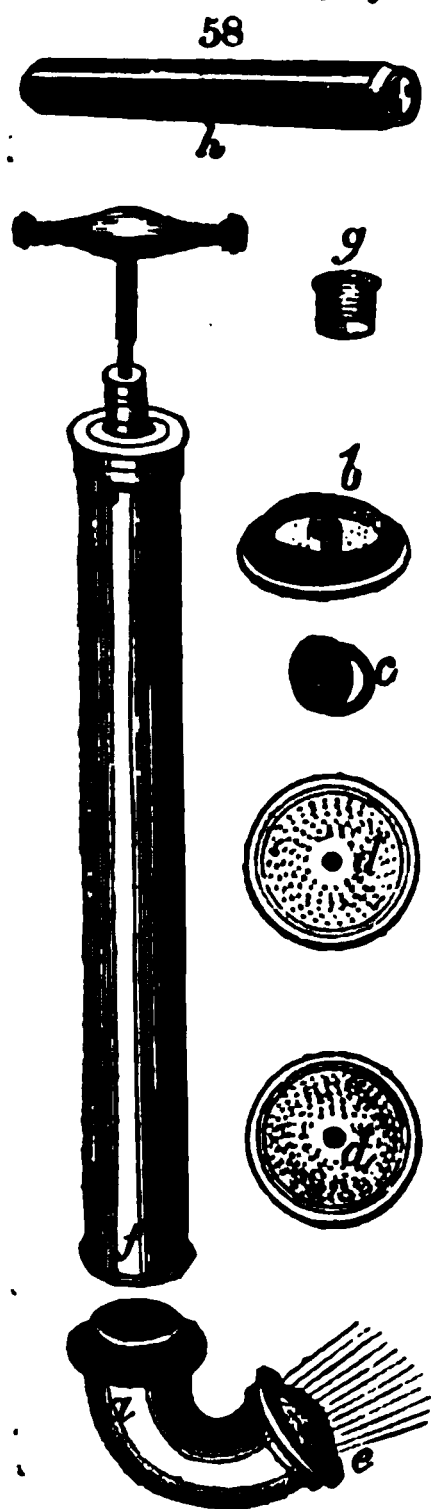
The Wheels of Carts and Waggons have lately been much improved by the introduction of cast-iron naves, or stocks. These stocks are found particularly suitable for warm climates, and I send a great many yearly to the West Indies and to other warm countries. I may notice to you, that the very first pair I made of them, in July 1808, have been ever since in use; the wooden parts, or spokes and felloes, were entirely removed about eighteen months ago; and the wheels are now, after the space of twenty years, nearly as good as ever they were. — Samuel Morton. Leith Walk, Edinburgh, October 27. 1829.

A cheap and elegant Method of obtaining the Impression of Leaves and Plants. — Take strong and smooth wove paper, oil it well with sweet oil; after it has been oiled a few minutes (or long enough to soak through), rub off the superfluous oil with a rag, then let it hang in the air to dry. After the oil is well dried in, take a lighted lamp, and raise up the wick in the lamp, that it may make a strong smoke; then take the oiled paper, and hold it in a horizontal position over the smoke, moving it slowly over the smoke and flame (so as not to burn it) until it is perfectly black. The plants or leaves of which you wish to take the impression should be pressed in the inside of a large book; when sufficiently pressed (which requires nearly a day), take them out, and lay the under side of the leaves carefully upon the oiled black paper; then lay upon the top of the leaves or plants some clean soft blotting-paper, and press it equally in all parts

with your finger, for about half a minute; then take up your plants or leaves, and be careful not to disturb their order; and place them on the book or paper (which should be previously damped), on which you mean to have the impression: cover them with a piece of blotting-paper, and rub it with your finger for a short time, then take off the plants or leaves, and you will have an impression superior to the finest engraving. The same piece of black paper will serve to take off a great number of impressions, so that, when you have once gone through the process of blacking it, you may make several impressions in a very short time. The principal excellence of this method is, that the paper receives the impression of the most minute veins and hairs; you may thus also obtain the general character of most flowers in a way much superior to any engraving. The impressions may afterwards be coloured according to nature. A soft, fine, wove paper, on which to take the impressions, and which should be previously damped, makes them much more fine and beautiful. The above receipt was sent me by a friend some years ago, but I have subsequently seen nearly the same in the *Philosophical Recreations*. I send you a few impressions, and remain, Sir, &c — *T Baynton. Heanor, July 14. 1829.*

The impressions, which are of currant leaves, ground ivy, and dandelion, are remarkably distinct. — *Cond.*

Drawing from Nature. — Young gardeners may accustom themselves to draw from nature, by coating the surface of a pane of glass with a solution of gum arabic, and letting it become dry. They may then with one hand hold the pane between their eye and the objects to be copied, and with a nail in the other trace the outline of the object on the gummed surface. Glass prepared in this way with gum, gelatine, or bone glue, has of late years been procured by English artists from France. (*Gill's Tech. Rep.*, vi. new ser. p. 226.)

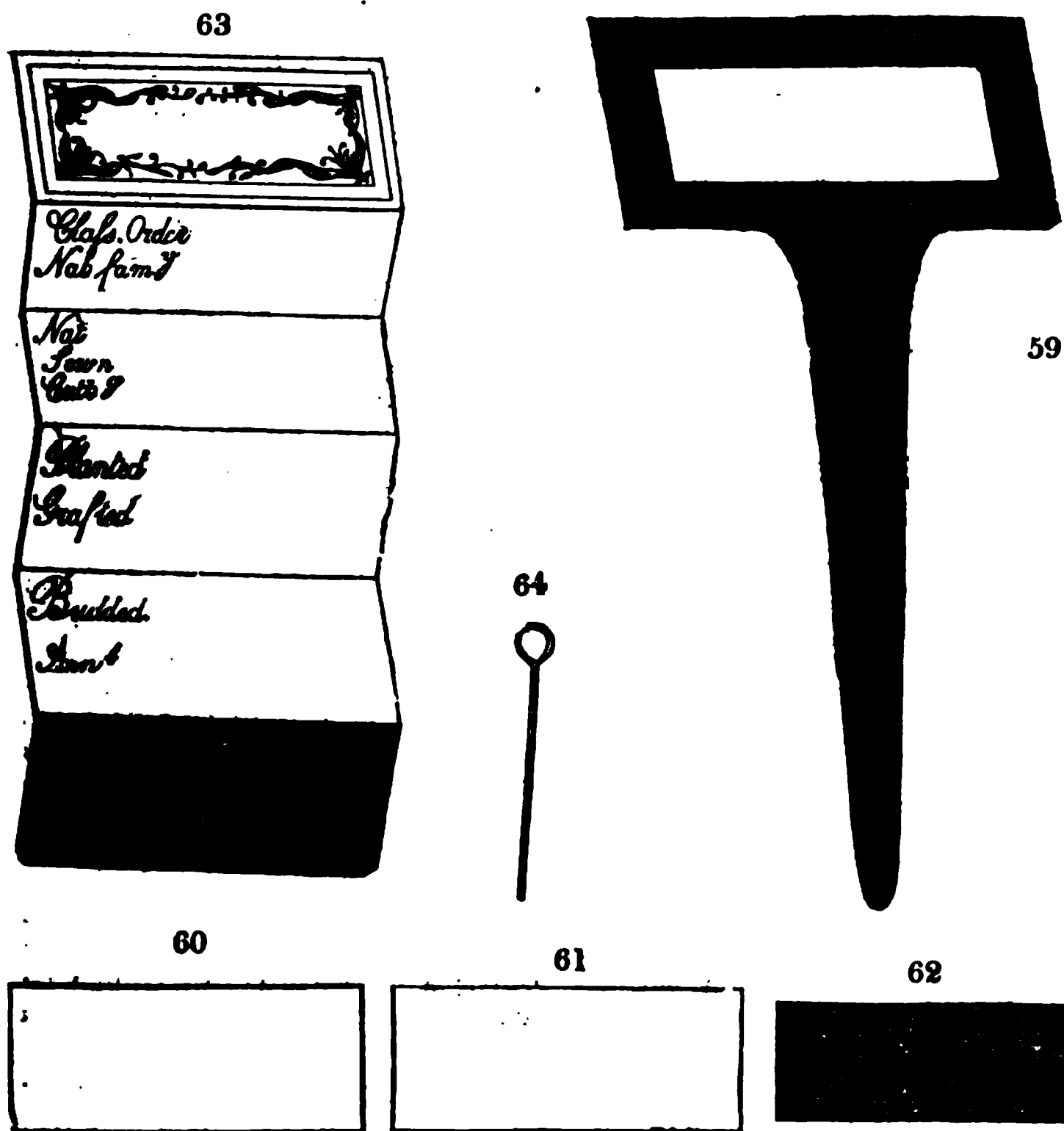


Macdougall's inverted Garden Syringe (fig. 58.) promises to be a very useful instrument for washing the under sides of the leaves of plants and shrubs, and especially trees trained against trellises in houses. As it may be changed at pleasure to a common or straight syringe on the same principle as Reid's, it may be said to cost no more than the common instrument. The different parts of this syringe, in addition to the cylinder or common syringe tube (*f*), are, a bent tube (*a*) which screws into the extremity of the straight tube; a convex rose for spreading the water, and which screws on either to the bent tube or the straight tube (*e*); straight roses drilled with large and with small holes (*d d*); a flap valve (*c*) which may be made of either leather or metal, and beneath which there is a wire grating to exclude impurities when the water is drawn in by the large opening in the centre of each kind of rose (*b*),—a subsequent improvement by Mr. Macdougall; a hollow screw for keeping in the valve and netting (*g*), and a punch (*h*) which is sent along with the syringe, and by which every gardener may punch out his own leather valves. The price and places of sale may be seen in our advertising sheet, but every gardener knows that he may order this and every

other article through his seedsman, whoever he may be, without farther trouble. — *Cond.*

New Tallies for naming Plants.— Sir, Among the various tallies for marking plants, recommended in your Gardener's Magazine, I have not met with one that will give a stranger the information he might require without recourse to books. A mode has occurred to me which, in the outset, embraces many of the requisites, but which, I doubt not, may be materially improved by persons better versed than myself in the subject; but, such as the invention is, you are welcome to give it publicity if you think it deserving. The tally is made of iron, and, for pots in houses not exposed to severe weather, in earthenware.

The iron tally consists of a small frame of iron, with a foot to support it (*fig. 59.*)*, in which a piece of glass (*fig. 60.*) is fixed, and another piece (*fig. 61.*) goes into the same groove behind, or, in place of it, a piece of copper (*fig. 62.*), and is movable. Between the two is placed a strip of folded paper (*fig. 63.*), having the following abbreviations printed:— No.,



class, order, natural family, native of, sown, cutting, planted, grafted, budded, annual, biennial, perennial; and through the outside piece of glass in front of the tally is seen the name written, and by turning to the back you see noticed the duration of the plant. If further information is wanted, then, by taking out a piece of wire (*fig. 64.*), fixed perpendicularly through two

* All the figures in this article are half the true size.

holes in the back, you may take out the paper and learn all the particulars above enumerated, or make your own observations on the spare paper for future consideration. Instead of two pieces of glass, to the largest size, I substituted a piece of sheet copper at the back, which is a better protection against the weather. Those made of earthenware are much upon the same plan, and may be had with the iron ones of Messrs. Bailey and Son, ironmongers, 247. High Holborn. The prices of the three sizes in iron are as follows:—the largest (*fig. 59.*), 2s. 6d. a dozen; the second size (*fig. 65.*) 2s. 3d.; the third size (*fig. 66.*), 2s.; white earthenware, 2s. 3d.; green earthenware (*fig. 67.*), 3s.



These tallies may also be used for fruit trees, by having them made with a shorter foot, and with a hole pierced to hang upon a nail or tie upon a tree. — G.

The above communication, and specimens of the tallies from which the figures are taken, were sent us by the inventor, a gentleman residing near Hampton, Middlesex. The tallies are certainly remarkably neat; but we fear the effect of the weather on the paper, the glass not being puttied so as to exclude the air. It is also right that we should state our opinion candidly, which is, that there is by far too much machinery about this tally, and about various other less intricate ones of small size. Even plain cast-iron tallies require repainting every three or four years; and, taking their original cost and the cost of painting and repainting into consideration, not to mention that of painting the name, we have been for years inclined to think that for seeds, all small plants, and generally for plants in pots, the old mode of cutting a lath, rubbing in a little white lead with the finger, and, while it is moist, writing in the name with a pencil, is the best. For trees and large plants out of doors, Stuart Murray's tally appears to us the best of the iron kind, where the name at length is to be introduced; but bricks, with the improvements of which they are susceptible, we should hope may be found better. As to wood, Mr. Thompson, of the fruit department of the Chiswick garden, has found yew-tree, unpainted, last longer than teak tree, oak, or red pine, painted or unpainted. We hope no reader will be discouraged from sending us articles or ideas, in consequence of the candour of these remarks. — *Cond.*

A new Budding-Knife. — Sir, I beg your acceptance of a budding-knife

(fig. 68.) I have had made upon a new and improved construction. I sell



a considerable quantity of them to amateurs and gardeners, being also useful as pen-knives, &c. In the hafts of some I have had small magnifying glasses inserted for botanical purposes; some I have also without a joint, the blades varying a trifle in length, to suit the fancy of the purchaser. I beg to add, that I have always considered the budding-knives, such as are generally employed, too long and awkward, for that nice operation; I also think the cordiform end of the haft better adapted to opening the incision in the bark than the square end, and the neck or narrow part of the haft may be firmly grasped by the little finger when using the ligature, instead of, butcher-like, putting the knife in the mouth. I am, Sir, &c. — *William Goddall, Nurseryman, Seedsman, and Florist. Hereford, January, 1830.*

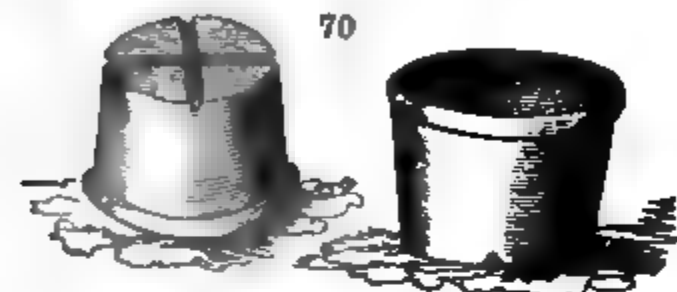
Mr. Peake's Vases and Flower-pots (fig. 69.) are well deserving the



attention of those who are fond of ornamenting their gardens or grounds with objects of this sort. We can speak from experience of the great

beauty of the workmanship, the sharpness of the foliage, and the durability of the material. We are very desirous of seeing classical statues, such as those of Pomona, Flora, Ceres, Apollo, Diana, &c., executed in similar materials, so as to be sold at moderate prices. If any potter in the country can effect this it is Mr. Peake. — *Cont.*

A grooved-bottomed Flower-pot (*fig. 70.*) has been invented by Antonio Piccioli, curator of the botanic garden at Florence. The object is to allow the free escape of the water from the hole in the bottom of the pot, which, when pots, are set either on smooth, hard surfaces, or soft moist surfaces, does not take place.



[The improvement may be worth adoption in very large pots, but would be ineffective in all the smaller sizes.] Carnations, and other delicate plants, in Florence, Milan, and other towns in Italy, are set on saucers, on small pedestals (*fig. 71.*) so as to be surrounded by water. [These saucers



have been used by Madocks and others in this country, but they are not common.] — *J. A. Llanbeden Hall, July 29. 1829.*

Edging-Tiles of Mr. Allardyce. (p. 128.) — Mr. Massie, one of the secretaries of the Aberdeen Horticultural Society, has been so good as to send us one of these tiles or bricks, which is $8\frac{1}{2}$ in. long, $4\frac{1}{2}$ wide, $1\frac{1}{2}$ thick, compact, heavy, of uniform surface, and not in the slightest degree twisted. Price, delivered in Aberdeen, 50s. per 1000; delivered in London, 65s. per thousand. Mr. Massie observes that "they look exceedingly neat when well laid, and have the advantage of not affording a lodgment for snails and earwigs, which the box edging invariably does." We admit the truth of what is said respecting harbouring insects, but still we cannot altogether reconcile ourselves to a brick, stone, or wooden edging. An edging of box is particularly beautiful in winter and spring from its deep green, when every thing else is brown. To feel the full influence of box edgings at these seasons one ought to have visited the kitchen-gardens of Holland and Germany, in which box is little used, and edgings either omitted, or stone, wood, or other material, used. One may know something of the difference between box and the want of it by looking into the garden of the "inestimable Institution," as Dr. Hooker calls it (p. 70.), during winter or spring, which, from the want of box or any green edging in most of the departments, must be allowed to be uncommonly dull. It may be replied that a kitchen-garden is formed for utility, and not for ornament; but every one knows that the kitchen-garden in the early part of spring is the most interesting scene in a country residence, and more frequented by the family, and especially the females and their little children, than any other.

In cases of very small gardens in or near towns, if we were to dispense with box and gravel, we would employ pavement supported by piers 2 or 3 in. above the surface, but so as to be an inch or two under the level of the adjoining borders, as already described Vol. V. p. 593.

Mr. Allardyce's bricks, or bricks somewhat thicker, but of similar material and texture, would answer well for numbering or naming tallies for plants and trees. The number or name might either be painted on them,

or, what would be incomparably preferable, stamped into the unburnt brick with types. Or sunk panels might be formed in the ends of the bricks to contain a slip of wood with a bit of glass glazed over it, in Mr. Stuart Murray's manner, so often recommended. Such bricks are now making for us by Mr. Peake of Tunstall, and we shall take an early opportunity of sending one to Mr. Massie for Mr. Allardyce. In the mean time, we should be glad to know from the latter gentleman, from Mr. Peake, or from any other brick or tile manufacturer, what would be the charge for impressing with types 1000 bricks, four words on the end of each brick (generic and specific name, native country, and year of introduction), the words averaging six letters each, and all bricks on which the words are misspelt to be paid for as common building bricks. The size of the letters of the type to be exactly double that of the letters in the words *Gardener's Magazine* on our cover; or thus, sending us a brick or two :—

JEFFERSONIA

NOBILIS.

Virginia. 1828.

Brick tallies, named in this way, we should think, would be the cheapest and most durable of all tallies, and, according to our taste, they would look better than any other in a botanic garden or in private collections. Small iron or wooden tallies placed at the roots of large old trees, as at Kew and Syon, certainly do not look so well as brick tallies would. With numbers, these tallies might be used by nurserymen. We should wish therefore to know the price of 1000 bricks, numbered from 1 to 1000. — *Cond.*

Transmitting-heat Wall. — The Rev. J. A. H. Grubbe of Stanton St. Bernard, Wiltshire, has taken out a patent for a wall so named. The intention is to erect thin partitions in gardens as substitutes for walls, against which fruit trees may be trained, and through which the warmth of the sun may, by reason of their thinness, be transmitted, which will greatly promote the ripening of the fruit, and improve its flavour. The material proposed to be employed for constructing these walls or partitions, is slate of the ordinary quality, in slabs of the kind usually applied to the roofing of houses. Iron frames are proposed to be prepared for the reception of the slates, like the frames of windows [with holes in both sides for inserting wires to serve as a trellis], and the slates being cut to proper shapes and dimensions, may be secured in the rebates of the frame, by putty, in the same way as glass. These frames are to be from 6 to 8 ft. wide, and of a suitable height, and may be joined together side by side, by rebates or flanges, and held fast by screws, bolts, pins, or staples, or in any way that may be found desirable to secure them firmly. Temporary blocks of stone may be placed along the ground to support the partitions, with cross pieces

to receive standards or slight buttresses, to keep the wall or partition perpendicular; and against the face of the wall trellis-work of wood, or other fit material, may be placed, for the support of the branches of the trees. Walls or partitions for gardens formed in this way will transmit the heat of the sun through them; and hence fruit, which may be growing against these walls having a northern aspect, will receive the benefit of the sun's warmth, transmitted through the slates. In the construction of these transmitting walls, the patentee does not confine himself to slate, but considers that plates of iron, applied in the same way, might answer the purpose nearly as well, provided that their surfaces were blackened, which would cause them to absorb more of the solar rays. Even frames of glass might answer the purpose, applied in the same manner, and perhaps some other materials might do; but it is desirable that the frames should be light enough to admit of their being removed without difficulty, in order that these partitions may be shifted from place to place [put under cover during winter], and set up in different parts of the garden, as convenience may dictate. (*Newton's Journal*, vol. iii. p. 257.)

A Composition for the Shoes of Gardeners. — Sir, Perceiving how assiduous, and I may say public-spirited, you are in recommending any measures calculated to increase the comforts of working gardeners, particularly in providing them with *sabots*, or wooden shoes, to protect the feet from cold during the pruning season (Vol. V. p. 575.), I venture to send you the following receipt for a composition or ointment for shoes, which I have myself long been in the habit of using, and have found, by experience, to be a very excellent one. However familiar this or similar receipts may be to some of your readers, to others it may be unknown, and therefore acceptable: — Take 1 pint of boiled linseed oil; 2 oz. yellow wax; 1 oz. Burgundy pitch; 2 oz. spirit of turpentine. Melt the ingredients well together, over a slow fire, and apply the composition to the shoes with an ordinary brush, repeating the operation as often as the ointment will dry in. Take care to rub it well into the seams, and set the shoes to dry in the sun. This composition not only renders the shoes more impervious to wet, but preserves and gives a tone to the leather, and enables it afterwards to take an exceedingly fine polish from blacking. I would, therefore, recommend its use, not only for strong shoes to gardeners, farmers, sportsmen, &c., who are obliged to be much exposed to the wet, but for shoes and boots in general. The composition may be kept in an earthen cup or gallipot for a length of time, and laid by for use as occasion requires.

————— “ Si quid novisti rectius istis,
Candidus imperti; si non, his utere mecum.”

I am, Sir, yours, &c. — *Dryshod.* Jan. 9. 1830.

Packing Fruit Trees for Exportation. — Sir, The following is the plan adopted by Mr. Prince of New York, in packing fruit trees, and which I can recommend, from experience, to your readers: — As soon as the tree is taken out of the ground, the roots are dipped in a thick mixture of earth and water. The roots are then tied in bundles, and dipped in all at once, and a mat is lapped over them, to keep the earth round them together. They are afterwards placed in a box, and a piece of wood is fixed across the box, over the top part of the roots, to prevent them from moving, as the branches are not lapped up at all. I have had trees packed in this manner, which have remained in the above condition four months; and, when unpacked, the roots were throwing out new fibres. This occurred last spring; and, although the season was so unfavourable, the trees made exceedingly fine strong shoots. The plan adopted by Messrs. Buel and Wilson, of the Albany nursery, in packing their fruit trees, is as follows: — They dip the roots well in a mixture of earth and water; but instead of lapping the roots in a mat, they lay them in the end of the box, and fill in between them with

wet moss; so that the lid of the box presses against the moss, and thus prevents the roots from being shaken. I, however, consider the plan of lapping the roots in a mat superior to that of filling in with wet moss, because a dampness proceeds from the moss, which produces a mildew on the branches of the trees so packed. This has been the case with trees that I have received packed in this way; but, after they had been unpacked for a short time, the mildew disappeared. The trees which I received this season, from Messrs. Buel and Wilson, are:—

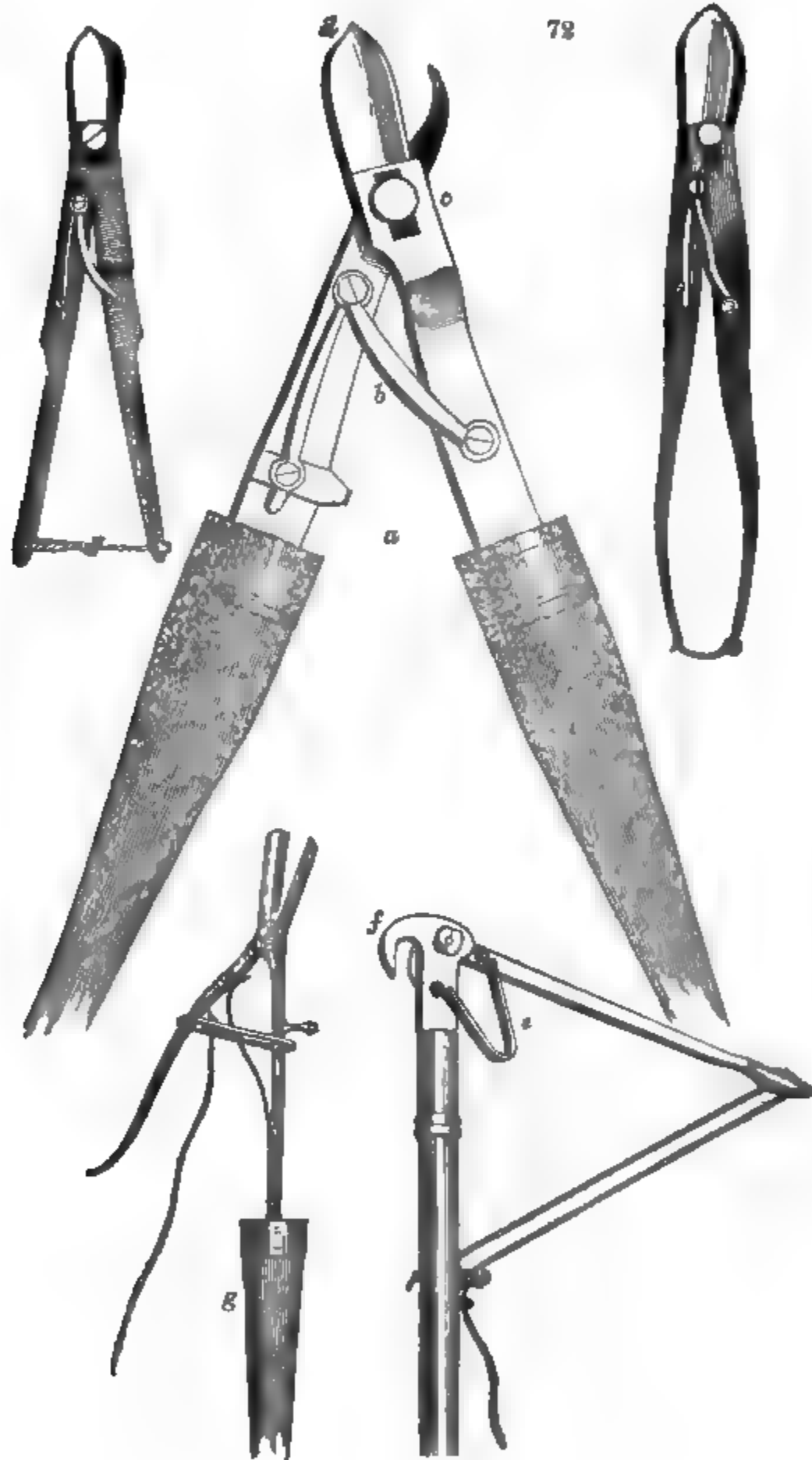
Names.	Native country.	When in use.	Price.
Beauty of the West A. -	Caynga	- Dec. to March	- 25 cents.
Caynga Redstreak A. -	Caynga	- Dec. to March	- 25
Fameuse A. -	Canada	- Nov. to Feb.	- 25
Jonathan A. -	Esopus	- Dec. to April.	—
Vermont Nonpareil A. -	Vermont	- Winter	- 25
Ortley A. (see Vol. III. p. 347.)	New York	- —	- 25
Pomone Gris A. -		- Oct. to Feb.	- 25
Shaw, a favourite winter apple -	Esopus	- Oct. to May	- 25
Seek no further A. -	New England	- Oct. to Feb.	- 25
Sapson A. -	Rhode Island	- Aug. to Oct.	- 25
Straat, a favourite autumn apple -	Esopus	- Sept. to Jan.	- 25
Newton Pippin A., green -	Long Island	- Nov. to May	- 25
Yellow ditto -	Long Island	- Nov. to June.	- 25
Amour, fine winter apple -	Albany	- —	- 25
Pound Peach -	—	- September	- 25
Washington Plum -	—	- —	- 50
Stephen's Genessee Pear, } a fine autumn variety - }	—	- —	- 37½
Washington Pear -	—	- —	- 37½

—*M. Saul. Sulyard Street, Lancaster, Feb. 15. 1830.*

Fruit Trees (Pears and Apples) were taken out to Madras, in 1793, by Mr. Main, in a box of damp moss; the moss was damp when the trees were packed, not touched by the way, and, after a voyage of three months, was found dry, but the trees alive. Some gooseberries and currants, which were packed with them, were dead. The vessel sailed from London on Jan. 1., and arrived the beginning of April. The trees came from Messrs. Loddiges. — *Cond.*

Garden Operations fit for Ladies. — We have seen some very handsome pruning instruments of the sliding-shears description, manufactured by Steers and Wilkinson of Sheffield. (*fig. 72.*) The largest size, resembling common hedge-shears (*a*), cost about 15s. a pair; and with them a man may cut through a branch as thick as his arm with ease. The smaller sizes, at from 4s. upwards, are particularly adapted for gardening ladies, as, with them, the most delicate hand and arm may cut off branches from prickly or thorny plants, or from trees and shrubs of any kind, half an inch in diameter. By using both hands, the most delicate person may cut through a branch of an inch in diameter. The great advantage of these instruments, as we have stated in our *Encyc. of Gard.*, is, that they amputate by a draw-cut like a knife, instead of by a crushing cut like common scissors or hedge shears. This is effected by the spring levers (*b* and *e*), and the oblong opening (*c*), by which a compound motion is produced in the cutting blades (*d* and *f*.) Neither these instruments, nor the very excellent grape and flower gatherer (*g*), manufactured by the same party, are of recent invention, but they have been improved on by Messrs. Wilkinson in various ways; and are so admirably adapted for lady-gardeners, that, considering the views we have as to the suitableness of certain parts of gardening for females, we

cannot sufficiently recommend them. We would wish every lady who lives in the country not only to be fond of botany, to collect specimens, dry



them between blotting-paper compressed with a bag of hot sand, and then gum them into a ledger indexed according to the natural system; but we

would wish them to devote a portion of every day, in favourable weather in the open air, and in unfavourable weather under a veranda or in a green-house, to some of the lighter operations of gardening, for health's sake, and for giving a zest to in-door enjoyments. Cutting out weeds with a light spud, which does not require stooping; stirring the surface with a light two-pronged spud, the prongs of which need not be much larger than those of a carving-fork, and the handle of willow or poplar, or cane not thicker than a fishing-rod; and pruning, with the sliding-shears, shrubs from 3 to 7 ft. high, are operations which do not require stooping, and which may be performed during the hottest sunshine, by the use of an Epinal hat, or a broad-brimmed straw hat, or other light broad-brimmed hat of any sort. Thinning out and tying up herbaceous plants and low shrubs; tying up climbers and twiners, and tying the shoots of trained trees to trellises or to nails, with eyes fixed in the walls; cutting off decayed flowers, flower-stems, withered roses, and dead points of shoots and leaves; and pruning shrubs under 3 ft. high, require stooping, and are fit operations for the mornings and evenings, and for cloudy weather. Watering is best performed in the evening; and, if any lady wishes to do this in a masterly manner, she ought to have one of Siebe's rotatory garden-engines, fitted up with a wheel and handles like a wheelbarrow: this she may wheel along the walks; and, by an operation not too severe for a healthy young woman, and which would add greatly to the strength of her arms and the tranquillity of her nights, throw the water from 30 to 40 ft. in every direction. We would much rather see ladies at these operations common to all countries, than see them shifting and otherwise working with sickly hot-house plants in pots, which cannot be done well without more or less affecting the hands. Watering with a light or small-sized Reid's syringe, or Macdougall's syringe, would not, perhaps, be an unfitting operation for a lady; but the best of all may be watering with a neat little green flower-pot, the supply of water being near at hand, and obtained from a cock, on no account by dipping, or carried to her by some attendant friend or maid. The care and watering of neat little alpine plants in pots is what most ladies are very fond of; and one of the principal enjoyments of city ladies, who know plants only or chiefly as pictures, consists in performing this operation. The plants to be presented to such amateurs ought to be plants that require water at least once a day, and that grow fast to require tying up, and make frequent dead leaves to require picking and dressing. The principle is, something to be taken care of, and to care for and depend on us; something that requires labour, the beginning and ending of all improvement and enjoyment. Having said so much respecting garden operations fit for ladies, we shall add that we should feel extremely obliged to any lady living in a district much in the trade of working in straw, if she would undertake to get us a few Epinal hats manufactured, and sent to Cormack and Sinclair's Viridarium (p. 379.) for sale. These hats do not require the straw to be platted, and they would come, we think, exceedingly cheap, and fit both for rich and poor. We will send our pattern hat to the first lady who writes that she will undertake this service for her countrywomen. To recur to the sliding-shears, they may be had through any ironmonger or seedsman. — *Cond.*

Hovea purpurea Sweet Fl. Aust. t. 13. — Our first knowledge of this beautiful species of *Hovea* is derived from the above-cited work (the discontinuance of which must be regretted by every botanist and cultivator), where a good figure and detailed description may be seen; but, as necessarily only a solitary branch is there displayed, it does not convey a correct idea of the growth and beautiful appearance of the species. My plant is erect, with numerous branches, about 3½ ft. in height, presenting a fine bushy shrub from the ground upwards, which is now in a temperature of 50° to 55°, profusely covered with elegant, pale-purple, odoriferous flowers. It is situated among other plants in a small pit 3 ft. deep, with about a foot

of chalk drainage; the remainder is composed of rich turfy loam and peat. From its luxuriant and healthy state, it would evidently admit of being cultivated in a warmer atmosphere, so as to produce its flower in December, which would materially enhance its value, from there being so few flowers in blossom at that season of the year. After flowering, and during the summer months, it will be advisable to allow it plenty of air, in order to preserve it in health, and a proper state for flowering the subsequent season. In a border of the conservatory, its more natural situation, the period of flowering is March, where, if it is carefully impregnated, it will produce seeds, which is, I believe, the only mode of propagation, except occasionally by layers of the young shoots. — *G. P. A.L.S. Jan. 28. 1830.*

Argemone mexicana. — Lunan, in his *Hórtus Jamaicensis*, gives a curious history of the discovery of the narcotic properties of the seeds of this plant. It appears that one night a runaway negro visited a sheep farm, guarded by an old and infirm watchman, and desired him to select the finest of the flock for his supper. The old man, conscious of his inability to resist, yielded an apparent consent, but asked his visitor to smoke a pipe with him first, to which he consented; the old man then slyly mixed a few grains of *Argemone* seeds with the tobacco, before giving it to his visitor, who took it, unsuspecting of harm, but before he had half smoked out the pipe, he fell into profound sleep, during which the watchman had him secured and bound; and finding himself on awaking a prisoner, he declared the old man had used Obeah. Such is an abstract of Lunan's tale, which furnishes some useful practical suggestions. — *W. Hamilton. Oxford Place, Plymouth, March 1. 1830.*

The Dólichos tetragonólobus is a most valuable agricultural plant; as, when sown about November, December, or January, it covers the ground with a dense mass of vegetation, effectually securing the soil from the action of the sun, and affording a most nutritious pasturage to cows, who devour it greedily when penned upon it, giving an increased quantity of milk, and enriching the ground both with their manure, and with the quantity of unconsumed vegetable matter which they tread into the ground. The plant flowers about July and August, and, if sown near that time, flowers and dies without any luxuriance of growth. The pods resemble those of the *Stizolobium pruriens*, but want the stinging pubescence. They are, however, when young, often mistaken for this last, and eradicated in consequence. The young beans resemble Windsor beans, and are excellent for the table; but as they advance to maturity they become unwholesome, and produce disorders of the stomach and bowels. — *Id.*

The Cow Tree, Palo de Vaca, or milk tree of Demerara, of which plants were lately brought to this country by Mr. Fanning of Caraccas, has been examined by Mr. Arnott of Edinburgh, who, from specimens not very perfect, considers it to be a *Tabernæmontana*. Mr. Don thought it a *Brósimum*. Mr. Arnott has little doubt of its belonging to *Apocýneæ*, though he observes the usual properties of the milk of this order are deleterious. "Future observations may, however, perhaps ascertain similar mild qualities in other species of *Tabernæmontana*, especially in their young branches, or when the sap is on the ascent, and before it is elaborated. Among the *Asclepiàdeæ* of Brown, which have similar baneful properties, and which many botanists indeed consider a mere section of *Apocýneæ*, an instance is also known of the milk being wholesome. I allude to a plant found in Ceylon, which the natives call *Kiriaghuna*, from *kiri* (milk), and who employ its milky juice when the milk of animals cannot be procured; its leaves are even boiled by them as a substitute in such dishes as require to be dressed with milk: it is the *Gymnema lactíferum* of Brown. The young shoots of several species of plants belonging to both the *Asclepiàdeæ* and *Apocýneæ* are used as food." (*Jameson's Journal*, p. 320., April 1830.)

The Meloncito d'Olor, Cúcumis sp.? — No notice has yet I believe been

taken of the Meloncito, which is undoubtedly a new species of *Cucumis*. The seeds should be sown in a hot-bed in January or February, the young plants cut down and shifted into larger pots several times before the beginning of April, and then planted out in a common melon frame, with a good strong bottom heat, in which they will flower and fruit abundantly in June, July, and August. By no other plan is a crop certain, as the Duke of Portland's gardener can tell you, and as Pontey knows, never having obtained fruit since the first year. — *W. Hamilton. Oxford Place, Plymouth, Nov. 7. 1829.*

Strawberries. — This fruit has engaged the attention of so many able pens, that it may appear almost presumption to add to the list; yet the high estimation in which the fruit is deservedly and universally held may justify a few more words on the subject, the object of which is to protract their enjoyment to a later period than, at least, I had till very lately contemplated possible. In the spring of this year, I turned out of pots, in which they had been kept all the winter, about 100 plants of Keen's seedlings, which showed no disposition to blow; my object was to obtain strong runners for my next year's potting. After some time, about a third of these plants came into blossom, and have continued to bear in succession until this month, leaving many unripe berries on the plants. I am aware that the showery season may have greatly contributed to produce this unusual effect; but to those to whom so late a crop is an important or even a desirable object, the means of supplying the want of rain will readily present themselves. — *J. M. Brighton, Nov. 1829.*

Potatoes are a very fit esculent to lower the food of the opulent, and to diminish their consumption of richer viands; but as the sole support of the poor, as a substitute for bread, they are totally inadequate. Man cannot live upon them long, in health and strength, whatever may be said of the Irish. Bread replenishes the system of itself, unaided by flesh meats; whilst the potato provokes and nurses a desire of ardent spirits, and places the individual so miserably fed in the situation of a traveller, who, his fare being coarser than usual, finds consolation in extending the indulgence of strong potations. Poor nourishment may drive a whole people into habits of drunkenness, into which, with better fare, few, comparatively, would be led: thus we may soon see the hitherto steady, industrious, joyous English people, changed into a nation of miserable turbulent drunkards. (*Times, Oct. 28. 1829.*)

ART. II. Foreign Notices.

FRANCE.

A SUBSCRIPTION Park and Warren for Field Sports. — The *Drapeau Blanc* gives notice of an association of a new kind, for the purpose of enabling persons of all ranks to enjoy the pleasure of the chase. A park of great extent is, it is said, taken on lease at no great distance from Paris; its extent is above 6000 acres, partly arable, and partly forest ground. The plan is, to open it to subscribers during six months, viz. from September 1. to March 1., an ample stock of game being secured in preserves. Part of the shares are, it is said, already bought up, and the purchase of the remainder is recommended to all *amateurs* of sporting, as bringing within the reach of almost every class an amusement hitherto confined to men of fortune. (*Scotsman, Jan. 9. 1830.*)

We rejoice in this, as we do in every attempt to bring those pleasures, which at present almost exclusively belong to the rich, within the reach of their poorer brethren. Knowledge and accomplishments, sports and recreations, fine clothes and comfortable houses, were all rare and exclusive pos-

sessions a century ago ; in a century hence they will probably be considered necessities of life to the general mass of society in Europe ; at least in France, Germany, and England. — *Cond.*

A new Passiflora, certainly the finest of the whole genus, between *P. racemosa* and *P. Rermisina* [?], has been raised here, and will be given out under the name of *P. Loudoniàna*. — *Nap. Baumann. Bolwiler on the Upper Rhine, Dec. 1. 1829.*

A hardy Ceanothus, with fine blue flowers, received from America under the name of *C. ovatus*, will be on sale next spring. — *Id.*

Tilia aurea, a new variety of the common lime, found in a forest in this neighbourhood, is already on sale ; it is a beautiful and singular plant ; it will not graft on *T. europæa*, but takes freely on *T. americana*. A problem for vegetable physiology to solve. — *Id.*

GERMANY.

Weather at Munich. — It may deserve recording, as an instance of that extensive range of the changes in atmospherical temperature which sometimes take place, that when we were at Munich last autumn, a fall of snow (melting, however, as it fell) occurred so unusually early as on the 7th and 8th of October, and that the English papers stated, that on one of the same days the stage coaches had come into Dover and other places on the coast, covered with snow. — *W. S. Florence, Jan. 2. 1830.*

The District between Ling and Saltzburg in Bavaria. — I hope when you next visit the Continent you will be able to take in and give us an account of the district between Ling and Saltzburg, which (the Tyrol excepted) pleased me far more than any other portion of our summer's tour of 2000 miles, partly from the natural beauties of the country itself, which much of the way resembled a drive through an English park, but chiefly on account of the universal marks of prosperity exhibited by the houses of the peasants, which were so gaily painted, their gardens so trim, and every thing around so neat and orderly, the very dunghills, when in front of the houses (which they rarely are), being concealed with a wall and top of neat boards, so as to present a delightful proof of well-being and comfort, the cause of which I should have liked much to have investigated, if my health would have allowed. [No man has a house in Bavaria without land attached.] This enquiry, I trust, you will some time or other devote a few days to in passing to Vienna ; and I only wish it were possible for you to spend six months every year in viewing and explaining a thousand other interesting points of Continental rural and domestic economy, of which books of travels, all filled with endless repetition of descriptions of churches and palaces, and almost always false descriptions, give not the slightest hint, and of which it is incredible how little is known in England, considering the cart-loads of travels that the last twenty years have produced.

We thought of wintering at Rome, but having met with (for Italy) a very good school for my two sons, who are fast getting to speak Italian as fluently as they do French and German, and having besides stumbled on delightful lodgings, a first story of ten rooms looking in part on a large convent garden, and behind on the large Jardin Anglais of the Marquis (I forget his name), we shall remain here for at least a month or two longer. Yours, &c. — *W. S. Florence, Jan. 2. 1830.*

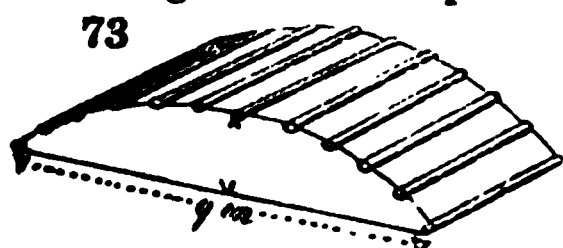
HOLLAND.

Mr. Knight's Visit to Haarlem. — Mr. Knight of the Exotic Nursery, King's Road, spent a fortnight in the bulb district, in April last, and was very much gratified with his visit. He had been in Holland and the Netherlands several times before, but never during the blooming of the hyacinths. He saw, he supposes, upwards of 100 acres covered with this plant in bloom, commencing on the road from Leyden to Haarlem, five or six

miles from the latter place. It seems the soil in Haarlem is now worn out, and no longer fit to grow hyacinths in sufficient vigour; and the growers, therefore, send their bulbs to be grown, by contract, on lands in the neighbourhood of Overveen and other places, in the same manner as the London seedsmen send seeds to be grown by country seed-growers in Essex and Norfolk. Wherever the bulbs do well, he observed the soil to be of the lightest description of sand, such as can be blown away by the wind; and the water stands under it not nearer the surface than 15 in., nor farther below it than 2 ft. 6 in. This, it seems, is the level of the water in the adjoining canals and ditches; and it is owing mainly to the points of the fibres going down to this water, that the plants are so fresh and vigorous, while the dry sand above prevents their bulbs from being rotted. As a proof of the exceeding lightness of the soil, immediately after putting in a crop in the spring season, the surface is raked, generally thrown into beds, and, from barrels, wheeled along the alleys between, cow-dung and water are thrown over the surface with a scoop, so as to cover it all with a thin crust, through which the finest seeds vegetate, and without which the entire surface would be blown away: the cow-dung is taken fresh from the cow-house. In these cow-houses no litter is used; the cattle stand on a level surface paved with brick; immediately behind the cows is a gutter, from which the liquid part of the manure runs off into tanks to ferment, and the remaining part is taken from the gutter for immediate use, in the manner mentioned. The cow is fastened by two ropes, one proceeding from each side through a ring in a post, and with a weight at the end; the two weights, as in the case of horses so tied, tending to keep the cow in the middle of the stall. She eats out of a trough, which is supplied from a broad passage in front of the heads; and there is also a broad passage behind the gutter. The points of the cows' tails are all tied to the ceiling or roof, to prevent them from dropping into the gutter when the cow lies down, or from whisking about while the operation of milking is going forward. They are combed, brushed, and kept covered with a cloth during winter; and in spring, when they are first allowed to go out and graze, they are clothed with a sheet till the weather becomes decidedly warm. (See *Encyc. of Agr.*, § 516.)

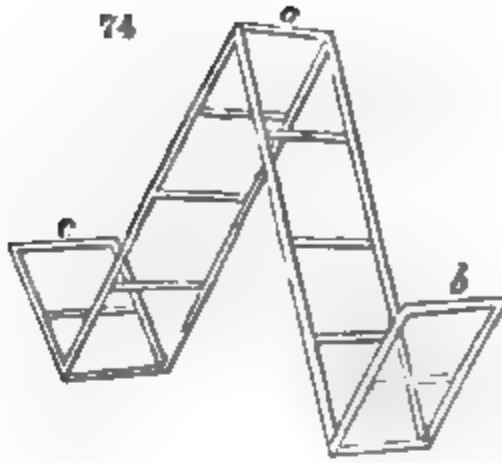
Mr. Knight found forcing going forward in the manner which we have described as practised at Hylands (Vol. III. p. 385.); raspberries ripe, and cauliflowers cut, about the middle of April. He was much taken with the standard fruit-trees generally trained in a pyramidal form; and with curious dwarfs, some of them saucer-shaped, 10 ft. diameter, and not more than 3 ft. high; others in the form of a bowl; others with a stem 1 ft. high, with only two branches proceeding from it, perfectly horizontal in position, and in opposite directions, with shoots covered with spurs rising perpendicularly from these two horizontal branches, at equal distances; those in the centre, 3 ft. high, gradually diminishing to 1 ft. at the extremities, and having, altogether, a strangely artificial appearance. These trees occur now and then in pleasure-grounds as odd ornaments, much in the same way as we graft dwarf or drooping shrubs, such as *Cytisus purpureus*, or some of the robinsias or caraganas, on the top of tall stems.

Among domestic improvements, Mr. Knight noticed a *foot-scraper for*



sandy soils (fig. 73.), which consists simply of a small bridge, formed by fixing iron bars in the circumference of two segments of ovals. The sand drops between the bars; and, when the space is filled, the scraper is removed.

He also observed a machine in use for beating stair-carpets and long covers for tables. (fig. 74.) This may be described as consisting of two ladders, about 6 ft. long each, joined by hinges at the middle (*a*), and appended to shorter ladders (*b c*), also, by hinges. These hinges admit of



folding up the machine, and using it as a short ladder, or laying it aside in little space. When a stair-carpet is to be beaten, the machine, which we shall call a *carpet-horse*, is brought out and set up (see fig. 74.); the roll of carpet is placed at *b*; a portion of it is drawn out, and a man or woman at one side, or two persons, one at each side, commence beating it; and, as it is beat, it is passed over the top of the horse (*a*), and finishes by being left in a roll, completely cleaned, at the opposite end (*c*). It is almost needless to mention, that

the hinges used are so constructed as that the short end ladders (*b* and *c*) can only open to a certain width.

At the Hague, Mr. Knight found a number of very large trees in the palace garden, called The Wood, blown down by a hurricane; some of them with trunks 2 ft. in diameter. The roots of these trees had invariably extended themselves along the surface, never penetrating into the water below.

The season of the year which Mr. Knight chose for visiting Holland was decidedly the best for visiting that or any gardening country. During March and April, all the main operations for the crops and products of the year are performed; the state in which plants have been kept through the winter, and the progress of forcing, are obvious; and while trees and shrubs in the open air are budding, the eye can still penetrate through them so as to determine the anatomy of groups and masses with reference to landscape-gardening, and of standard and wall-fruit trees with reference to pruning. — *Contd.*

ITALY.

Vegetables and Fruit at Florence. — The vegetable market at Florence now exhibits profuse supplies of fine cauliflowers, broccoli, blanched endive, and young cabbage-lettuce for salads, young turnips and carrots, celery (not blanched), large white radishes, &c. &c. Cardoons (*Cynara Cardunculus* L.), which we have not seen before, are abundant, the thick inner leaf-stalks being blanched by the leaves being tied together. These supply the place of the kohl-rabi of Germany (turnip cabbage), which is not grown here, and, when well stewed, are not very dissimilar in taste. No headed white cabbages for sauerkraut, as in Germany, but borecole, savoy, and several other allied varieties, with loose leaves. Potatoes, mostly of a roundish red-skinned kind, indifferent in quality, and dear, 5 quattrini (equal to three farthings English) the pound of 12 ounces. This high price, compared with the low price of cauliflowers, of which a fine head costs only 4 or 5 quattrini, would seem to indicate that the cultivation of potatoes is not well understood in this part of Italy; as, indeed, I am inclined to think it is not any where on the Continent. Apples abundant; pears not so plentiful: the quality of each good, but not superior, and no great variety of kinds. Grapes in great plenty, both white and black, and very delicious: the skin shrivelled, and the juice very sweet, from having been hung on strings in airy rooms since being pulled six weeks ago; price now, 8 quattrini the pound. Oranges, citrons, and lemons, green, with a leaf or two to each, and some ripe oranges from Sicily. Great quantities of the seeds of *Pinus Pinæa*, called by the Italians *Pinochi*, which are as large as an ordinary nut-kernel, but more oblong, and almost as pleasant to the taste, with a slightly resinous flavour; and chestnuts at the corners of every street, where they can be had in seven different forms; raw; cooked and hot, both roasted and boiled; dried by heat (the skins

being taken off), in which state they have a much sweeter and superior flavour; and made into bread, a sort of stiff pudding, and into thin cakes like pancakes. This valuable fruit constitutes a considerable portion of the food of the lower classes, who must daily consume in Florence some tons. From the low price of chestnuts in Italy (5 quattrini for about a pint), there can be little doubt that they might be imported into England (at a lower duty), and afforded at a much cheaper rate than they are usually sold there, and so as to become one of those innocent luxuries of the poor which every benevolent political economist would desire to see Italy enabled to exchange for our hardware and cottons, if the custom were introduced in London and other towns, of roasting them on small heat iron stoves, heated by coke or charcoal, at all the green-shops and gingerbread-dealers, so as to tempt passengers with them, " piping hot," as is the case in Italy, in every street; where, in cold weather, the labourer or schoolboy, in buying a pint of chestnuts, stores up in his pocket a stock of *portable caloric*, which warms his fingers, while he at the same time both gratifies his palate, and appeases his hunger. — *W. S. Florence, Jan. 2. 1830.*

Weather at Florence. — The first half of November was clear, dry, mild, and altogether delightful. On the 15th and 16th, a deluge of rain fell, with snow, on the distant Apennines. The wind then veered to the N.E.; and, from the 18th to the 23d, it froze more keenly than I remember it to have ever done so early in England, the ice on the ponds being fully three inches thick, with boys sliding on it. The chief cold must have been in the night, as Fahrenheit's thermometer, at eight in the morning, stood at 36° and 37° on the 18th, 19th, and 20th; at 33° on the 21st and 23d; and at 30° on the 22d; and, during the whole period, the sun shone brightly in the daytime, and the thermometer rose to 45° and 50°. Previously to this frost, which was much more severe than is usual here in November, all the orange trees in pots had been housed. Those of the hardy variety, called *arancio forte* (a sort with a bitter peel, like that of Seville oranges), of which there are many trees 12 and 15 ft. high in the open ground at Florence (and which, as they often endure, unprotected, a much greater degree of cold, would, doubtless, stand the winter equally well in Hampshire, Devonshire, and probably the whole of the southern coast of England), were not injured; nor the plants of *Nerium Oleander*, which abound in gardens. The crop of olives, however, seemed to suffer. Perhaps one third of the crop had previously the dark purple tint, indicating ripeness, but two thirds were still green; and I observed, when the frost went, that these last had their skins much shrivelled; and they are now assuming an unnatural chocolate colour, and have no appearance of ever becoming perfectly mature.* On the 24th of November the frost broke up; and, from that time to the 26th of December, the weather was mostly open, with occasional slight frosts, and very high winds, and often heavy rain, and altogether resembling the same season in Devonshire, except in the longer continuance and much greater quantity of the rain that fell, and the greater heat of the bright days, on one of which (Dec. 13.) I observed three butterflies (*Vanessa Atalanta*, *Còlia Hyale*, and *Hipparchia Egèria*), and many other insects, on the wing. On the 26th of December, frost set in, and continued, at the close of the month, very keenly, the thermometer being as low as 22° on the 30th.

The following are the results of my journal of the weather at Florence, for the last 13 days of November and the whole of December: —

* Some of the ripe olives were gathered by hand by the middle of December; but the great bulk of the crop will not be pulled off for some time yet, the total gathering often being not ended till March and April: indeed, towards Naples, the ripe olives are sometimes suffered to hang till the new blossoms appear in May.

November (18th–30th).

Mean of the thermom. at 8 A.M. 42°
 Highest point (25th) 53
 Lowest (22d) 30
 Wind, 5 days N.E.; 1 E.; 4 S.;
 2 W.; 1 S.W.
 5 days sunny; 2 partially sunny;
 1 cloudy; 5 rainy, but fair.
W. S. Florence, Jan. 2. 1830.

December.

Mean of the thermom. at 8 A.M. 37°
 Highest point (3d) 49
 Lowest (30th) 22
 Wind, 13 days N.; 8 N.E.; 1 N.W.;
 1 E.; 2 S.E.; 1 W.; 5 S.W.
 11 days sunny; 5 partially sunny;
 5 cloudy, but fair; 10 rainy.

DENMARK.

Copenhagen, Royal Gardens of Rosenburgh. — Feb. 9. 1830. In my letter of Aug. 20., I told you that our harvest looked unfavourable, as it certainly did, by reason of the cold and wet summer; yet the autumn turned out a little better than had been expected, though a great deal of hay and corn in the fields was spoiled by the continued rain. The frost commenced in October, and has continued from the 9th of November to this very day; it is still freezing, without any appearance of a thaw or change. We have had the thermometer at 11° and 12° Reaum., with a good deal of snow, and very little sun. I am informed, by nurserymen and people in the country, that some hundreds of bushels of potatoes were left in the ground when the frost set in; and I believe it, because in clayey and low ground here it is quite impossible to dig in the autumn, on account of the frost. The peaches and apricots on walls ripened, but had hardly any flavour; the peaches tasted like sugar and water, and the last ones ripened were quite mealy and tasteless. Of pears, the Diamond, Beurrée Blanche, and Beurrée Grise, did not attain their usual perfection. The early sorts of grapes on open walls might be eaten, but taste rather sour. The Syrian grape, and two other late sorts, did not ripen in our late vineries, which are kept without fire-heat; but the black Hamburgh, under glass, attained a very good flavour, though not the finest colour, from want of sun.

The Vegetable Market has been well supplied; but at present it begins to decline, or rather the prices begin to rise.

March 2. A great quantity of asparagus is grown by market-gardeners near Copenhagen, and plenty of forced asparagus is to be had from Christmas till they come up in the open ground; the price is at present 5 dollars (about 9s.) a hundred. The forcing is practised in the manner described by M. Lindegaard in the *Horticultural Transactions*, and is certainly far superior to the English method of forcing the roots in hot-beds; the latter mode will undoubtedly be soon discontinued when the simple way of forcing in the open ground is more generally known. I would strongly recommend to English practice M. Lindegaard's method of forcing grapes (*Encyc. of Gard.*, § 3044.); and it is to be regretted that this method, which is no expense, is too little known in such parts of Europe where grapes do not attain their greatest perfection every year in the open ground.

My *Garden Library* contains, besides the works you lately sent me, the *Encyclopædias of Plants and Gardening*; twenty-two numbers of the *Gardener's Magazine*; Sickler's *Pomologie* (Deutsche Obst. Garten), 22 vols. complete; Dietrich's *Lexicon* (*Dictionary of Gardening and Botany*), 21 vols., compl.; Miller's *Gardener's Dictionary*, 6th edition; Rafn's *Danmarks and Holsteens Flora*, 2 vols. compl.; Reichart's *Land und Gartenschatz*, latest edition, 5 vols.; and Schouw's *Geography of Plants*, with maps; &c. &c — *J. P. Petersen.*

RUSSIA.

Rare Plants from Persia to the Petersburg Botanic Garden. — Sir, We have at present several pots of the beautiful *Cyclamen ibéricum* with dark purple flowers, something similar to *C. còum* in flower, which we received

last summer, with many other fine bulbs from M. Szovitz, a very zealous botanist and naturalist, who is at present employed to collect plants, bulbs, and seeds in Persia, for the Imperial botanic garden. A few days ago, we again received from him two large boxes of bulbs and different roots from the same country; unfortunately many of them were spoiled by the sudden frost of 28° Reaumur, 31° below 0 Fahr., which we had a week ago; but still the greater part of them seem to be alive. I particularly noticed amongst them *Arum orientale*, *Lris paradóxa* (similar in colour to *ibérica* and *susiàna*) *Lris squálida*, and several other undetermined ones; *Merendèra caucásica*, *Puschkinia scillóides*, several species of the *A'llium* tribe, *Cròcus speciosus*, *Leóntice vesicària*, a new species of *Ixiolirion*, *Hyacínthus pallens* and *ciliàtus*, *Amaryllis lùtea*, *Eremurus spectàbilis*, Tulips, *Gladìolus*, *Ornithógalum*, &c. We already possess a fine collection of Persian plants, which we raised last spring from seeds; and the herbarium of the garden museum is very much enriched by many scarce, new, and finely dried specimens from the same quarter. Alexander von Humboldt, the celebrated naturalist, lately visited the garden, and was highly pleased to see such a rich collection of scarce plants. — *F. Faldermann. St. Petersburg, January 7. 1830. (N.S.)*

Some hardy Varieties of Olive are said to be cultivated in the botanical garden of Nikita, in the Crimea. How they came there is not mentioned; but it is probable they have been raised from seeds ripened on the spot. — *F. F. January 7. 1830.*

Lilium Pomponium. — This plant is cultivated in Kamtschatka as the potato is in Britain, and its bulbs laid up for winter store. They are called *Savannas* by the natives, and when boiled taste exactly like a waxy potato. We wish some gardener living in a peaty district in Ireland or Scotland would try what could be done with them. — *Cond.*

AFRICA.

Cape Town, Cape of Good Hope, November 2. 1829. — Sir, An interesting society, by the name of the "South African Institution," has been established here. I send you two of our newspapers, which will give you a brief account of their proceedings: we are, however, too poor to carry into effect every object of the Institution; but it is highly necessary to the improvement of the colony, of whose resources and value Europe is as yet partially ignorant. A spirit of improvement is prevailing among us, but the mass of the population from their confined education do not permit of much domestic change as yet. That you may judge of the deplorable state of husbandry which is practised here, I send you the copy of the *Calendar*, originally written 130 years ago, and the proof sheets of a revision for the year 1830, which I have given, but I do not permit my name to be attached to such an imperfect production. I am in hopes that a botanic and experimental garden will be established in a short time. I shall give you early notice the moment the establishment is formed. The wilful and scandalous neglect of this colony by the British government has been continued in a most unparalleled degree, and that against their own interests. The present governor, Sir Lowry Cole, gives general satisfaction; but his hands are tied in many respects, which may be ascribed to the reports of the commissioners, who were misled by false evidence, and worse conclusions while here; it would lead me too far into political discussions to point out those misstatements, but I could do it, and completely and effectually confound those persons, whose interested evidence was given in expectation of individual reward or special favour from the late governor.

I am happy to inform you that your various publications have a place in the public library here, but as yet little attention has been paid to them; they would, however, claim attention, were you to give us some broad

hints respecting the Cape, and indeed it is for that reason I send you the *Calendar*, and shall be glad to answer any queries you may be pleased to send.

A *Quarterly Journal* of the Institution will be printed, of which I shall send you a copy; there may be some food in it for your *Magazine of Natural History*. Whether my papers will be printed I do not know; but they are of a local nature, and consequently uninteresting to Europe.

I have refrained from sending you any communications on the Cape botany as yet, as I hardly know where to fix my attention to what might be generally useful. But the unwelcome detention so long in Cape Town has allowed me to observe the habits of various plants deserving of attention, and which I shall put into form at some favourable opportunity.

In your *Encyclopædia of Plants*, which I have seen in the public library, I perceive some errors which I did not expect; but a singular one is, the placing of *Crassula quadrangulâris* of Burmann among the *Euphorbiaceæ*. I am the only person at the Cape who knows the plant, and I believe the European botanists are unacquainted with it. It is not at present within my reach.

It is not only with surprise, but also with regret, that I find a plant of mine has been called *Clivia nobilis*, while the name published by Dr. Hooker is the only authorised one. It was only a few days before I left England that I refused to name the plant to any person but Dr. Hooker. I must say that I am much displeased at the whole transaction.

This colony is slowly improving. The settlement at Swan River has already been of benefit here to the farmers. Persons emigrating to the new settlement would do well to purchase their stock of cattle, horses, sheep, pigs, and poultry, &c., at the Cape; which they can do at one fifth of the cost in England, independently of the expense of transport, the voyage from the Cape to Swan River is about one month, perhaps less. We have not yet heard thence, but expect to hear every hour, and are anxious to learn how they get on. Mr. Drummond and family resided in the same house with me, and left this in excellent health; the short stay he made here enabled him to take with him some of our fruit trees, and at a season for having every chance of success.

We have had a cold winter, and abundance of rain; much more corn has been sown than at any former period, and we anticipate an abundant harvest.

I wish you could persuade one of the English nurserymen of your acquaintance to send on trial a few one-year headed-down or maiden fruit trees, placed in a tin case and closely soldered down. I would thankfully return, to the value of 10*l.*, South African seeds and bulbs. An experiment made here of confining fruit trees soldered down for four months has succeeded.

We want the Orleans Plum, Green Gage Plum, Moor Park Apricot, Swan's Egg and good Keeping Pears, good Keeping Apples, Morello and other good Cherries.

I shall write to you again as soon as possible, but I hope you will favour me with a few lines as soon as you receive this; and, if you can persuade any person to send plants on trial as above, I will send to the value as mentioned, whatever state the trees may arrive in, whether good or bad. I wish the experiment to be made, and will publish the result. They should be marked "Fruit Trees," and sent by one of the Cape traders.

I have been so frequently disappointed in receiving good kitchen-garden seeds from England, that I have declined sending positive orders for more; but if any seedsman of your acquaintance would send to the amount of about 5*l.*, I would immediately return Cape seeds and bulbs for them; they should be packed in brown paper, or canvass, and marked garden seeds. The following are the most wanted: — Cauliflower, York Cabbage, Red

Cabbage, Radish of sorts, Royal Dwarf Peas, Prussian Peas, Scorzonera, Dutch and Stone Turnip, Curled Parsley. The Cauliflowers, Turnip, and Radish are the most essential. If directed to me by any of the Cape traders, they would be sure to come safe. With best wishes I remain, Sir, &c.
— J. B.

Mr. Mackay of Clapton has volunteered a box of fruit trees, of different sorts, and another of seeds. — *Cond. March, 1830.*

NORTH AMERICA.

The high and equal Education Principle in the United States. — The following extract of a letter from America, dated March 27., appeared in the *Times* of May 1.: — “ There exists a respectable and continually increasing party, denominated ‘ The Mechanics’ and Working-men’s Party, which has already three daily papers in its interest in the city of New York alone — the *Daily Sentinel*, the *Morning Herald*, and the *Evening Journal*, besides many others throughout the country. This party, which carried one, and nearly carried six representatives at the last annual state election, will probably exercise a considerable influence in the elections of this year. It advocates a great national system of education, to be free to all, at the public expense, and to support as well as educate the children of those whose parents cannot afford to educate and support them ; so that every child born in the republic shall have a liberal scientific education, equal in real advantages to any which the wealthiest can now command. If this measure, which is daily engrossing more of the American public, should be carried, we may see the times of Lycurgus again revived, when a nation became the instructress of all her young citizens. In a country like America, where the principle of universal suffrage is recognised, such a measure is especially required ; and we augur from it the most important results. This new party will, if I mistake not, soon exercise an overwhelming influence here. Ten days since the Speaker of the House of Representatives came out most decidedly in their favour.” (*Times*, May 1. 1830.)

We rejoice in the existence of this *Mechanics’ and Working-men’s Party*, and hope it will ultimately prevail over every other. As to the times of Lycurgus, we do not think a reference to them in good taste ; there is very little of the past in any age or country worth remembering, except to be deplored and avoided, and certainly nothing worth holding up as a model. The single object which we most ardently desire for every individual in every country in the world is, a high and equal degree of education from infancy to maturity. Having made sure of this, we would leave it to work its way, not doubting that it would lead to whatever was best for mankind in every country. Nothing, as it appears to us, will be satisfactorily established in any country, till something like this degree of education exists. It is not in the nature of things that happiness can be general, or government any thing like perfect, till mankind are brought as near as practicable to a level in every thing ; and it is equally self-evident that they can neither be brought to, nor kept on, a level in every thing, till they are put on, and kept on, a level in education. The beginning, the middle, and the end, therefore, of all that has reference to the *beau idéal* of a perfect society, is individual education, high, equal, universal. In Europe much good might be done in every country by the adoption of a representative system of government, and in England, where that system already exists, by improving it, or by what is called a thorough parliamentary reform. We sincerely desire this individually ; because it would tend to relieve us from an intolerable burthen of taxation direct and indirect ; in consequence of which taxation, and of that alone, we, in common with many others, who labour incessantly from morning to night, and from one week’s end to another, and in short we may say from the beginning to the end of life, and that too with success, are barely able

to maintain a decent external appearance in society, without either internal tranquillity of mind or solid comforts ; alike without that relaxation which continued exertion requires, and a prospect of final independence and retirement from labour. A reform in parliament, we say, would tend to grant us some relief ; but how long would this relief be experienced by the country, without the high education of the whole of the people, so as to create an enlightened public opinion ? Education, therefore, we repeat, is every thing. Happily in this country, and more especially in France, it is making considerable progress, but that progress is nothing to what it appears, by the above extract, is taking place in America. According to the immortal Jefferson, the effective part of society is changed every twenty years ; that is, the majority of those whose opinions have most influence with the public in the present year 1830, will be dead or *hors de service* in the year 1850. A new class will then be on the stage, with totally new ideas and opinions, before whom many of the institutions, ideas, and opinions now held sacred, or not even to be spoken of, will give way like snow before the mid-day sun, or like the *débâcle* of a grand river. Whoever has seen the breaking up of the Neva at Petersburg, or of the Moskwa at Moscow, grand and sublime sights which we have witnessed, and by which a broad street of ice, covered with carriages and every sort of traffic, is in a few hours, and without noise or injury to the bordering houses, turned into a broad clear river, and covered with passengers in boats, may form some idea of what will one day in this and in every country be the grand result of high, equal, and universal education. Such a change we have compared to the quiet of the *débâcle* ; because, though it will like it be great, it will be without the slightest injury to life or property ; without injustice, and without violence of any kind ; the simple and grand result of enlightened public opinion ; a tribute of reason and natural feeling to suffering humanity. — *Cond.*

Classical Education. — At a meeting of Yale College, on Sept. 11. 1827, a committee was appointed to enquire into the expediency of so altering the regular course of instruction in this college, as to leave out of said course the study of the dead languages, substituting other studies therefore, &c. (*American Journal of Sciences and Arts*, vol. xv. p. 297.) — We have long considered the study of the classics as the bane of education in this country. They consume the time which should be devoted to the acquisition of useful and solid knowledge, while their value in themselves is extremely small, and that value, such as it is, never comes into the possession of one in fifty of those who sacrifice almost every thing else to obtain it. These are doctrines which we have long held, and it delights us to find that the good sense of the Americans, the most acute people in the world in practical matters, has led them to the same conclusion. (*Scotsman*, July 18. 1829.)

SOUTH AMERICA.

Mr. D. Fanning, in forming a botanic garden at Caraccas, received every encouragement from the Colombian government, which, it appears from letters received by Mr. Fanning, was fully sensible of the importance of such an establishment in South America. Dr. Vargus being afterwards commissioned by the government to inspect Mr. Fanning's labours, gave a most flattering and satisfactory account. On his departure from England, Mr. Fanning intends taking with him a collection of all the fruit and forest trees, shrubs, and flowering plants, medicinal as well as ornamental, that can be procured, besides a great variety of seeds. It is to be hoped that such a collection of plants from this country will prove of essential service to South America, where fine fruits and flowers are held in such high estimation. — *A. R.* Dec. 1829.

The Milk-Tree of Demerara is a different genus from the cow-tree of Humboldt, of which, though so many plants were lately brought to this

country by Mr. Fanning (p. 377.), we doubt if there be one now alive. Mr. Smith, formerly a pupil of Professor Jameson, but now resident in Guiana, has sent home a specimen of the milk, and the analysis will be given in a future number of Jameson's *Journal*. We very much doubt the probability of acclimating trees from that part of the world in Britain; but, when once known, they may become of immense importance to the cottagers of the West India Islands, of India, and of many countries. It thus appears difficult for a man to conceive what there may yet be in store for him in unexplored regions. Whatever tree will grow in Guiana, will grow on at least one fourth part of the earth's surface: here, then, is the prospect of a new source of one of the most agreeable and nutritious substances in use as food, for a considerable proportion of the human race. — *Cond.*

The Guaco Plant. — In addition to the beautiful account given by Sir Robert Ker Porter, Sir Ralph Woodford, as well as other learned gentlemen, of the guaco plant, I transmit the following accounts, which have come under my own knowledge, respecting its efficacy in curing the bite or sting of those poisonous reptiles which abound in South America, as well as in other warm countries: — As a man named Santiago was clearing land on an estate called Bogade Topo, he was stung by a tiger snake in the leg. In a few hours his leg swelled very much, and the flesh about the part stung turned quite black. The juice of the guaco was at length procured, and he drank a wine-glassful every hour, for six hours, and the part affected was rubbed with the leaves. The pain ceased, and the swelling shortly after went down without any sensation; but, for several days, the part affected remained black. Two slaves on an estate called Pilinseat, in the valleys of the Toye, were stung by a rattle-snake. The poor fellows suffered much before the juice of this vine could be procured: their legs and bodies swelled. They drank very freely of the juice, and rubbed their bodies for several hours. In the course of 12 hours, the pain ceased, and, shortly after, the swelling went down; but it was several weeks before they were fit to work. A man named Don Pedro Pearos, who lived in the neighbourhood of Caraccas, was stung by a correll snake, and his life was in imminent danger. After drinking the juice for 18 or 20 hours, he got some relief; and, in the course of 48 hours, the swelling went down. A large piece of the flesh fell off the leg; and the part that received the sting, and the hollow of the wound, still remain, the part never filling up. Seeing the great virtue of this most valuable vine, I procured it, and cultivated it in my botanic garden at Caraccas, where persons daily apply for it. I gave two bottles of the juice to Mr. Ryan, who had laboured under rheumatism for several years. In four days after using it, the swelling went down; and in ten days he was enabled to attend to his work. I gave it to a Mr. Bell; and, in like manner, he got well in a few days. I also gave two bottles to a gentleman in La Guarayro, who was troubled with the gout. He got so well from drinking the two bottles, that he considered himself finally cured; and, having such good faith in it, he sent some bottles to a lady a relative of his in Hamburgh. In applying it for the toothache, one drop is sufficient to relieve the most violent pain. The dose is a wine-glassful, morning, noon, and night. It increases the appetite, and keeps the bowels gently open. — *D. Fanning. London, Dec. 1829.*

Mode of cultivating the Aracacha Plant in the Caraccas. — Take a young plant or sucker, and cut it close to the top, leaving only two leaves on it. After it is cut, let it remain a day or two in the shade, in order to allow the cut part to heal. Plant them out early in April, about 2 ft. apart, on the top of drills, barely placing the plants in the earth. Let them remain thus till the latter end of August or beginning of September, when the roots will be fit for use. Then take up both root and plant, and place them in a warm dry situation until April, and then prepare again for planting, as stated above. — *Id.*

The Tobacco Plants of Colombia are : — The Cumanaceo, Tobacco de la Cueva, de las Misiones, de la Laguna de Valencia cura seca and Caraco, de la Laguna de Valencia cura negra, de Oriluca, de Varinas cura seca, de Casavare, de Bayladores, de Rio Negro en Andullas equal to the tobacco of the Brazils. The tobacco of the Cueva, in the department of Cumana, is said to be a tobacco growing from the excrement of certain birds that deposit them in a cavity, and from which the natives extract it: it is considered the finest tobacco in Colombia. The birds are a species of the owl. The natives of Varinas, and through the whole kingdom, chew a substance called chimo, which is made of a jelly, by boiling the Varinas tobacco, and afterwards mixed with an alkali called hurado, which is found in a lake near Merida. Both are an *estanco* of government, and produce a large annual income. The mode of cultivating the above tobacco by the natives is as follows : — They prepare a small bed, sifting the earth very fine, on which they sow their seed, and then cover it with plantain leaves for some days. As soon as the plants make their appearance, they raise the leaves about 2 ft., so as to give the plants free air, and to allow them sooner to grow strong. When they become large enough to plant, they have the land prepared; and, as soon as the rainy season sets in, they plant out their young plants, taking great care to protect them from the sun, and to keep them clean as they grow up, as well as to prevent the worms from destroying or eating the leaves. When the leaf is ripe, it gets yellow spots on it; and, on bending the leaf, it cracks. Then it is fit for pulling off, which is done, and the leaves are neatly packed in handfuls, placed in a dry situation, and occasionally shifted from one place to another. When the leaves are well dried, they are all packed closely, and well covered, to keep the flavour in. The leaf is left in this state for one or two months, and then made up for use. They never top their tobacco, and the leaves never ripen together. The mode adopted by the North American planters is somewhat different: they top their plants when they have attained eight full leaves, or they keep it secured; and, by this means, the leaves are large and sappy. They cut off the stem at the ground, when ripe, and hang it on laths for one day and a night, with the leaves all hanging down; they then place it in their barns, and, when these are quite full, they smoke it for some days, and let it remain in that way until the stem, as well as the leaf, is quite dry; they then put it in a heap, and cover it up for market. They strip off the leaves, and pack them in hogsheads, as it is received in London. — *D. Fanning. London, Dec. 1829.*

AUSTRALIA.

The Agricultural and Horticultural Society of New South Wales. — The address for 1829, by its president, Sir John Jamieson, has just been received in London. “ The account given in it of the state and progress of agriculture in the colony is highly favourable. It appears, from this address, that the culture of the tobacco plant has answered every expectation: 30 tons of it, as much or more than all the settlers have grown in any former year, have been produced by five estates alone. There is, therefore, a prospect that, in a few years, shiploads of the leaf may be despatched to England for manufacture, provided the British markets afford a remunerating price. A skilful planter is reviving the growth of the sugar-cane on the river Manning. The growth of the opium poppy is more exuberant than in many other countries; and the quality of the opium made from it invites its more general cultivation. It is but a few years since the olive tree was introduced in the colony; and the rapidity of its growth, together with its excessive fruitfulness, shows that the soil and climate are particularly favourable to it. Every year’s experience tends to the belief that the vine will one day become an important plant in the colony. The variety of the European grapes, and the perfection which they attain, hold out a promise

that wine will hereafter become the most important export of Australia. Had the settlers been brought up in climates where the vine and olive are cultivated, wine and oil would long ago have been among the exports of the colony. But the British population had directed their attention chiefly to their native agricultural pursuits : and hence the delay of other productions more congenial to the soil and climate, and of greater importance to the trade of the colony. It does not appear that the attention of the British settlers has been yet sufficiently diverted from those pursuits, so that the Society's exertions will most probably be directed to those purposes which the circumstances of soil and climate render more particularly recommendable. (*Morn. Chron.*, May 7.)

Sydney, October 22. 1828. — You have, no doubt, heard that New South Wales has been suffering from drought for the last three years. We have just had a month's rain, and the country has changed from an arid desert to the most beautiful and luxuriant green. The wheat is ripening ; and we shall, no doubt, have a plentiful harvest in another month's time. After the very excellent description of the scenery and peculiarities of New South Wales which you will find in Cunningham's work, I am almost afraid to enter on that subject. The foliage has been represented as very, nay, preposterously ugly ; and so, indeed, it is ; though the fault does not rest with the nature of the foliage, but in the circumstance that our timber is not only all primeval, but the natives are accustomed to set it on fire, for the purpose of attracting the kangaroos when the new grass springs up : so that you may imagine that forests, presenting an assemblage of burnt and dead trees of the most awkward and fantastic shapes, mixed with and rising above more youthful foliage, cannot be very picturesque, but rather grotesque. This is the general appearance of all the forests at present ; and, until the whole face of the country undergoes the renovation of settlers, it must continue so. But, far from being ugly, the foliage is really beautiful. Nothing can be more so than the young gum trees, with large leaves ; they have a good deal the character of the birch, and the leaves, hanging at an angle to catch the sun's rays, glitter splendidly. The swamp oak (*Casuarina stricta*?), tea tree (*Thea viridis* L.), apple tree, &c. &c., are all of them excellent varieties ; and I have seen spots that were cleared on the first establishment of the colony, and that are now wooded, present as beautiful masses of foliage as you would wish to behold. Then we have the fan or cabbage palm, the burwan, the grass tree, and the fern tree, all of them the most beautiful things in nature ; the wide-spreading fig tree, seemingly a species of mangrove ; and vines that would induce you to believe that you were contemplating the famous banyan of India : we have all these to add variety to our endless forests. Then, as to flowers, who that has not seen the warratan enlivening our gloomy glens with its magnificent crimson flowers, can form any idea of the power which it possesses in making even our rocks seem interesting ? The others are mostly small, but present an endless variety ; and, about July and August, the whole neighbourhood of Sydney is a perfect flower-garden : not growing here and there like a solitary primrose or violet, but covering the whole surface with one mass of varying colour. Every week is sure to present two or three new varieties ; and though the spring months are most flourishing, this is the case all the year round. Then there are all the shrubs, the banksias and acacias or wattles, adding their share towards the completion of this wild garden. The scenery around Sydney is very pretty, there being great variety of surface created by the varied figure of the waters that surround it. What beautiful little spots there are, in which one fancies life would slide easily away in the improvement of one ! There are no large spaces calculated to form a park ; but for the grounds of a villa, from 10 to 15 acres, the variety of surface and diversity of view is charming. Many bits are now being given away on the conditions of building to a certain amount, and I hope to put

my thumb on one ere long. Your lessons on landscape-gardening and laying out have not been lost upon me even here. I have made a design for laying out and planting what is called the Hyde Park here, and also for building allotments around it ; and it has pleased the governor. We have a large botanical garden here ; but it does not appear to me to be well kept up, and possesses nothing very rare. It is open at all times to the public, the consequence of which is, that no one visits it. There is also an Agricultural and Horticultural Society very well supported, almost every respectable person being a member. The pursuits of the settlers are merely the increase of their stock, and the growth of wool, wheat, and maize. I am so ignorant of what has been done in the way of naturalising our trees and shrubs to the climate of England, that it is almost folly for me to talk about it ; but I should certainly like to see the gum or eucalyptus adorning your lawns : so disposed, I think, they are the most beautiful of trees. The burwan I remember to have seen at Loddiges', and think it could be naturalised ; also, the grass tree and fern tree would add a striking and agreeable feature to your shrubberies. It will prove a most fertile source of amusement to me, should I return to England, to recognise the flowers, trees, and shrubs of Australia. Though I do not know their names or classes, I know them all by sight, and shall never forget them. The flowers I have always on my mantle-piece, sumptuous nosegays that would fetch half a guinea in Covent Garden, and these are got in five minutes in the bush. I am unable to study as I ought to do ; but the climate is so relaxing, that, after six hours' teasing in an office, you are little calculated for aught but exercise and society. You can have no idea of the delightful temperature of our winter. The clear sunny days, without the excessive heat of summer, are enough to revive the spirits of the most gloomy invalid. — *I. T.*

The Hobart Town Courier. — We have to thank an unknown correspondent for a series of this paper to the 30th of May last. These papers are highly interesting as showing the progress of the colony ; the spread of civilisation of a high and advanced kind over an immense tract of country, and the growing consumption of European, and especially British, manufactures. In almost every paper there are several advertisements, containing lists of the British goods just arrived, and for sale in the ships, or in certain stores. As centuries must elapse before Australia can become a manufacturing country, the prospective advantages of the colony to Europe, even if it should, which it most likely will, in the course of thirty or forty years, become a free union, are incalculable. We wish we could see, under the present governments of the different settlements, a description of allotments of land for the support of schools, similar to what obtains in North America. We have sent the editor of the *Hobart Town Courier* a copy of our *Parochial Institutions, &c.* and of *Des Etablissements, &c.* ; and we hope he will be able to find room, portion after portion, for the whole of both pamphlets. In his pages they will remain to be consulted, at a period more auspicious than the present for the establishment of Parochial Institutions, or at least allotting lands for them throughout the whole of the civilised part of Australia. We recommend also, both to the Australians and the Americans, the subject of village breathing-places, or play-grounds, noticed in a former Number (Vol. V. p. 686.) — *Cond.*

WEST INDIES.

Jamaica Agricultural Society, May 20. — *Read.* A paper on the Natural History, Climate, &c., of the vicinity of Spanish Town ; by the secretary.

Presented. Fourteen varieties of Kidneybean, cultivated at the Caracas ; by Dr. Lockhart of Trinidad.

Thanks were voted to the Hon. Vice-Admiral Fleming, for his polite attention in forwarding the views of the Society, by the introduction of several new objects of cultivation in the island.

Netlam, Tory, and Colin M'Kenzie, Esq., were elected members. — X. Y. *July* 17. 1829.

Botanic Garden, Bath, Jamaica, March, 1829. — The following plants have been received by Thomas Higson, Esq., the curator from St. Anne's, Trinidad, as extracted from Mr. Lockhart's letter of March 16. : — *Piper nigrum*; *I'nga*, species scarlet-flowered; *Jasminum undulatum*; *Lécythis coccinea*; *Cássia*, species Caraccas; *Piper Bèlle*; *Ròsa odorata*, new; *Méspilus japonica*; *Punica Granatum* var. *album*; *Flacóurtia*, species excellent, native fruit; *Ròsa humilis*; *Bignonia ophthalmia*; *Polýgala*, species Caraccas; *I'xia sinensis*; *Strophanthus dichotomus*; *Sórba*, native of St. Vincent, their mangosteen; *Amomum éxscapum*, two varieties; *Ficus elástica*, cutting; together with four nutmeg plants. Two of them are natural, and two are females, one of which is inarched and the other a layer. Another box has been received, which contains four layer plants of natural nutmeg, and cuttings of the *Sàlix Humboldtiana*, which I hope will succeed, and be an ornament to Bath garden. I have found the nutmegs grown best in the shade or virgin land. If irrigation can be adopted during the dry season, it would be a great convenience, as watering is absolutely necessary. When the trees are in fruit, they show the want of water, by the skin of the fruit shrivelling; which symptom will require double the quantity of water, and perhaps fail, after all, to bring the fruit to perfection. We have now several trees in fruit in this garden, and some of them may mature 1000 fruit: 1200 were taken from one tree last year. The black pepper, a climbing plant, also delights in a shady and rich loamy soil. The *Erythrina Corallodéndrum* is an excellent plant for it to run up; it also requires water in the dry season. The Guinea pepper grows in the shade or virgin land, and is in flower in March; after which, to the rainy season, the fruit is maturing; water is necessary to perfect their pods. I have sent three plants of a supposed *Flacóurtia*, as it is a dioecious plant, that you may have a chance of fruit. The loquat grows to a handsome tree, and the fruit is said to be good. The elastic fig grows to a very large spreading tree: one planted in this garden, in 1821, spreads 25 paces in diameter. The sorba is a fruit which has been cultivated in the botanic garden at St. Vincent for several years, and called there the mangosteen. I found other species of the same genus in Demerara, St. Vincent, and Trinidad, all of which resemble most the *Xanthochymus pictorius*, and may probably belong to the same genus when better known." — X. Y. *July* 6. 1822.

The Importation of Castor Oil from the West Indies seems to be increasing. If that most unjust tax of 3d. per lb., which is equal to a charge of 22l. on the ton, were removed, there is no doubt it would become an object of great commercial importance, besides being a cheap article of the greatest medicinal value to the poor. But so the poor, colonial agriculture, and the manufacture of England are treated. — X. Y. *July* 17. 1829.

ART. III. Domestic Notices.

ENGLAND.

HARDY Plants generally treated as Green-house. — *Acácia armata*, *Calceolaria rugosa*, *Commelina tuberosa*, *Hippocrèpis baléarica*, and *Fúchsia grácilis* I have found sufficiently hardy to stand our winters, though they are generally treated as green-house plants. — J. D. *London, Jan.* 19. 1830.

List of Plants sent to England, in the ship *Rose*, from the port Oratava, Teneriffe, May, 1829, by P. B. Webb, Esq., to his gardener, Wm. Young, Milford House, near Godalming, Surrey: —

Ranunculaceæ. Trib. 3. *Ranunculææ.*

Ranunculus (*C. Bauh.*) *cortusæfòlius* Willd., β *Teneriffæ Pers.* “?”

Cruciferaæ. Subordo 1. *Pleurorhizææ.* Trib. 1. *Arabidææ.*

Cheiranthus (*R. Br.*) *tenuifòlius* *L'Her.* “Porto Santo.”

Subordo 3. *Orthoplòceæ.* Trib. 16. *Raphanææ.*

Crámbe (*Tourn.*) *strigòsa* *L'Herit.*

Caryophýlleæ. Trib. 1. *Silèneæ.*

Silène (*L.*) *canariénsis* *Spreng.*, *suavècolens* *Barthelot.* “It grows at the foot of the Peak; and in the lofty basin of the Canadas, from 1200 toises above the sea to where vegetation ceases.”

Malvaceæ.

Lavatèra (*Linn.*) *phœnícea* *Vent.*, “is a native of this island, and not of Madeira, according to Decandolle and others;” *acerifòlia* *Cav.*

Hypericinææ. Trib. 2. *Hypericeæ.*

Hypéricum (*L.*) *reflèxum* *Lin. fil.*

Zygophýlleæ.

Zygophýllum (*L.*) *álbum* *L.* “Dry sands, sea-shore.”

Rutaceæ. Trib. 1. *Diósmeæ.*

Rùta (*Tourn.*) *pinnàta* *Lin. fil.*

Celastrineæ. Trib. 2. *Euonymeæ.*

Celástrus (*Lin.*) *cassinòides* *L. Herit.*, “called here Perradillo.”

Rhámneæ.

Rhámnus (*Lin.*) *glandulòsus* *Ait.*

Terebinthaceæ. Trib. 6. *Pteleaceæ.*

Cneòrum (*Lin.*) *pulveruléntum* *Vent.* “Arid sand, sea-shore: it is used as bark in fevers.”

Leguminosæ. Subordo 1. *Papilionaceæ.* Trib. 1. *Sophòreæ.*

Anagýris (*Tourn.*) *latifòlia* *Willd.*

Trib. 2. *Lòteæ.* Subtrib. 1. *Genisteæ.*

Cýtissus nubígenus *Link.* It grows at the foot of the cone of the Peak. *Adenocárpus* *Dec.*, *Frankeniöides* *Choisy.* “It grows high upon the sides of the Peak.”

Subtrib. 2. *Trifolièæ.*

Lòtus (*L.*) *gláuclus* *Ait.*, “Madeira;” *portosanctànus*, “from the island of Porto Santo.”

Rosaceæ. Trib. 2. *Amygdalææ.*

Cérasus (*Juss.*) *Híra* *Webb.*

Trib. 1. *Ròseæ.*

Ròsa (*Tourn.*) *Armidaæ* *P. B. Webb.* “It grows at the foot of the Peak, in the lofty arid basin of the Canadas and circular chain which surrounds it, 1200 toises above the level of the sea.”

Onagrariææ.

Vísnea (*L.*) *Mocanèra* *L.*

Crassulaceæ. Trib. 1. *Crassulææ.*

Sempervivum (*L.*) *villòsum* *Haw.*, *glutinòsum* *Ait.*, *Smíthii* *Sims.*, *uríferum* *P. B. Webb.* “It is called Ura de Guanches by the people.”

Umbellíferææ.

Bupleùrum (*L.*) *canariénse* *Spreng.*

Compósitææ. Subordo 1. *Cichoraceææ.*

Sónchus (*L.*) *Jacquini* *Dec.*, *radicàtus* *Ait.*, *gummíferus* *Link.*

Prenánthes (*L.*) *pinnàta* *Lin. fil.*

Andrýala (*L.*) *pinnatífida* *Ait.*

Subordo 3. *Carduaceæ*. Div. 1. *Carduaceæ* *vèræ*.*Carlowitzia* (Mönch) *salicifolia* Mönch.*Centaurea* (L.) *arguta* Nees.Subordo 5. *Jacobææ*.*Cacalia* (L.) *Kleinia* L.*Cineraria* (L.) † *multiflora* L'Herit., † *lactea* Willd.*Tussilaginis* L'Herit.Subordo 8. *Anthemideæ*.*Artemisia* (L.) *argentea* Ait.*Chrysanthemum* (L.) *pinnatifidum* Lin. fil.*Pyrethrum* (Sm.) *coronopifolium* W.*Myrsineæ*.*Myrsine* (L.) *canariensis* Spreng.*Oleaceæ*.*Olea* (L.) *excelsa* Ait.*Asclepiadeæ*.*Ceropogia* (L.) *aphylla* Haw.*Convolvulaceæ*.*Convolvulus* (L.) *canariensis* L.*Boragineæ*.*Echium* (L.) *fastuosum* Jacq. "It throws up a superb stem 6 ft. high."*E. strictum* L.*Myosotis* (L.) *latifolia* Poir.*Solaneæ*. Sect. 2. *Pericarpium baccatum*.*Physalis* (L.) *aristata* Ait.*Scrophularineæ*.*Scrophularia* (L.) *cruenta*.*Isoplexis* (Lindl.) *canariensis* Lindl.*Labiataæ*.*Thymus* (L.) *micans*. "Madeira."*Teucrium* (L.) *spinosum* L.*Bystropogon* (L'Herit.) *origanifolius* L'Herit., *plumosus* L'Herit.*Acanthaceæ*.*Justicia* (L.) *hyssopifolia* L.*Primulaceæ*.*Campylanthus* (Roth) *salsoloides* Roth.*Plumbagineæ*.*Statice* (L.) *macrophylla* Willd., *arborea* Brouss., *imbricata* P. B. Webb.
"A new species, growing at Gocra Chico and Buena Vista."*Plantagineæ*.*Plantago* (L.) *arborescens* Poir.*Laurineæ*.*Laurus* (L.) *canariensis* Willd.*Euphorbiaceæ*.*Euphorbia* (L.) *aphylla* Brouss., *balsamifera* Ait., *atropurpurea* Brouss.*Urticeæ*.*Boehmèria* (Jacq.) *rubescens* Jacq. "Very shady and moist places."*Urtica* (L.) *morifolia* Poir.*Amentaceæ*. Subordo 1. *Saliceæ*.*Salix* (L.) *atlantica* P. B. Webb. "Teneriffe and Madeira."

Amaryllideæ.

Pancrätium (L.) canariense Ker.

Asphodèleæ.

Aspáragus (L.) álbis L., *Smithianus* P. B. Webb, *plocamöides* P. B. Webb.
“ It grows on dry arid rocks.”

Júnceæ.

Luciöla (Smith) Berthelötii Penny.

Lüzula (Dec.) Berthelötii Nees von Esenbeck.

Fílices. Subordo 1. *Ophioglósseæ.*

Ophioglóssum (L.) lusitánicum L.

Subordo 4. *Polypodiáceæ.*

Gymnográmma (Desv.) aúrea Swartz.

Nothochlæ`na (R. Br.) subcordátum.

Cheilánthes (Swartz) pulchélla Bory, suavèolens Swartz.

With this interesting collection have been received numerous other plants, to which no specific names were attached. — *William Young. April, 1830.*

A Collection of South American Alpine Seeds has been received by Dr. Hamilton of Plymouth, from Mr. Watts. They were collected by Mr. Chas. Hauswolf, in June and July, 1829; and the latter gentleman says that he hopes some of them will prove fit inmates for the green-house, and possibly hardy annuals. The seeds are mixed, and without names, but Dr. Hamilton recognises among the collection some belonging to the genus *Tagètes*. The doctor adds, “ You will oblige me by requesting those to whom you distribute them, to communicate to me, through the medium of the *Gardener’s Magazine*, information as to the plants raised from these seeds, their genera, species, mode of treatment, value as acquisitions to our florists, hardihood, &c.” The quantity received being too small to divide, we have sent the whole to Mackay of Clapton, who, we have no doubt, will report on them agreeably to Dr. Hamilton’s wishes. — *Cond. April 21. 1830.*

Islington Botanic Garden, in which is to be erected reading and scientific lecture rooms. Proposals for this object were published in October last, from which the following is an extract : — “ Central public rooms for the daily papers and periodicals are a great desideratum to the intellectual portion of the respectable inhabitants of Islington. Until this moment, no point of attraction, as a public room or walk, for mutual intelligence, has been formed, in a parish possessing in itself as much learning and ability as any suburb of the metropolis. It is now intended to select a central spot for this purpose, readily accessible from Highbury, Canonbury, Barnsbury, Upper Islington, the Upper and Lower Streets, and the parish generally; to consist of three or four acres, as a lawn and grand parade; upon which to erect a low thatched-roof building, for reading and lecture rooms; with terraces 20 ft. wide, seats, &c. Other improvements in the neighbourhood may be connected with this object; and subjects of great importance result from this association, as they shall be agreed on by a majority of the proprietors and subscribers.” (John Williams, Honorary Secretary, North End, Upper Islington; and 78. Cornhill.) We highly approve of this proposal; and though we have not leisure actively to cooperate in bringing it into effect, yet, if the parties concerned think it worth while to submit any of their plans or schemes to us, personally, we shall be happy, personally and gratis, to give our opinion on them. We say personally, merely because that mode requires less time than writing. It is by uniting together, and forming the noblest public gardens and places of assembly, that the poorest in the land will one day participate in those enjoyments which, in the present stage of the progress of society, belong exclusively to those who

are excessively rich. One must have been present at the assemblies in the gardens and banqueting-rooms of some of the richer nobles of Vienna and Moscow, occasionally thrown open to the public, for whom the finest music and provisions of every kind, without limitation, are provided, to understand something of the enjoyments which such institutions are calculated to afford in this country. — *Cond.*

The Garden of the Horticultural and Botanical Society of Manchester is proceeding apace. The ground in all is 15 acres, chiefly of sandy soil, but in part clay. The east, west, and north walls are built; there will be about 100 yards of glass, besides pits and frames. Two lodges are built, which, I am afraid, you will not like; and, unfortunately, the main entrance to the garden is from the north (on the Chester road), which you have shown in your *Encyclopædia of Gardening* to be always bad. — *Y. H. March 2. 1830.*

The Weeping Ash of Wilson's Nursery at Derby, of large dimensions, and nearly half a century old, has been purchased by the Duke of Devonshire, and removed to a conspicuous situation at Chatsworth. The tree was removed on a machine similar to that used by Sir H. Steuart, constructed by Messrs. Strutt of Belper, and under the direction of Mr. Paxton, the duke's head gardener. The weight of the tree was estimated at from 7 to 8 tons, and the distance to which it was conveyed is 28 miles. We are not informed whether the roots were previously prepared by cutting; but, from the subject not being mentioned in the very long account of the operation given in the *Derby and Chesterfield Reporter*, April 15., we should conclude not. We are happy to hear of the duke's taste and liberality, and should be still further gratified to learn that he had established, or would establish, at Chatsworth, a complete arboretum, allowing sufficient space for each tree to attain its full size, and introducing every hardy tree which could be procured in the London nurseries. The expense would not be greater than removing half a dozen such trees as the one above mentioned. — *Cond.*

Heating Hot-houses by Fowler's Thermosiphon (Vol. V. p. 453.). — A printed letter has been sent us on this subject, of which we subjoin an extract: — "The house, a plant stove, is 60 ft. long; the vertical height 15 ft.; and the cubical contents, including an excavation for growing the plantain, banana, and other choice stove-plants, above 10,000 ft. I generally allow about an hour, with a brisk fire under the boiler, before I set the machine to work: I then remove the siphon plugs, and, almost instantly, the hot water rushes up the ascending leg of the siphon, which destroys the pre-existing equilibrium very considerably, and causes a rapid flow of hot water from the furnace into the main-pipe on the ground-floor; and, in the space of a few minutes, the whole line of main-pipe, as well as the siphon, is supplied with hot fluid. When I find that the atmosphere of the house has risen to the maximum I want, I let the fire be stayed with wet ashes: after this process, little or no attendance is required. The fuel I chiefly use is either small coal or culm, mixed with ashes. The machine has often continued working, for upwards of 14 hours, without any addition of fuel; namely, from six in the evening till eight the next morning: the temperature at night being 79°; in the morning, 68°; the thermometer in the open air, at the same time, 28°. I have frequently worked it, for several days together, without any attention being required to the filling-cock; the motion of the fluid denoting the perfect action of the machine, and showing more or less rapidity, according to the management of the fire. The air is salubrious, and highly congenial to vegetation, having neither an overplus of aridity nor superabundance of humidity. The machinery part answers perfectly well; the operation is simple, and the management easy: not the least alteration has been required ever since its commencement, and it is not likely to get out of order, or require repair. I have seen several steam-machines, level hot-water apparatus, and many different constructions of brick flues, for causing artificial heat, but am decidedly of opinion that the thermosiphon

is very superior to all other plans hitherto adopted. It may be applied both for *top* and *bottom* heat, to any denomination of houses, pits, or frames where artificial heat is required; and, by its use, a complete command of temperature is obtained for every horticultural purpose. It is my intention to have one for forcing melons, cucumbers, strawberries, sea-kale, rhubarb, kidneybeans, mushrooms, asparagus, and plants in pots; as I am certain that much may be done by the machine where any nobleman or gentleman has an extensive establishment for forcing." — *Henry Dalgleish, Gardener to J. Milford, Esq., Coaver. Exeter, April 1. 1830.*

The table which accompanies Mr. Dalgleish's letter contains a register of the temperature of the external atmosphere, and of the stove, as taken three times a day during the months of January, February, and March. In Jan., the temperature of the stove, in the evening, varied from 64° to 81°; in the morning, from 56° to 66°. In February, from 66° to 76° in the evening; and from 58° to 63° in the morning. In March, from 69° to 86° in the evening; and from 60° to 66° in the morning. The coldest day in January was 26° in the morning, and 25° in the evening; in February, 23° in the morning, and 21° in the evening; in March, 34° in the morning, and 44° in the evening. — *Cond.*

Funds for General Education. — After an attentive perusal of the twenty-two reports of the commissioners of enquiry into our public charities, I do not believe there is less than 1,000,000*l.* sterling which might be annually available to objects of education and general utility, not a tithe of which is so applied; whereas, by judicious measures, and at a trifling expense, a large portion of this much abused and magnificent income might be redeemed. — *Speech of D. W. Harvey. (Times, Jan. 28. 1830.)*

Cytisus Laburnum flore purpureo. — Sir, I send you a *Cytisus Laburnum flore purpureo*; it is a hybrid, and was obtained from seed of the *C. Laburnum* with the *C. purpureus*. I do not know by whom it was raised, only that it was originated near Paris about five or six years ago. I have cultivated it four years, and never flowered it till last year; it also flowered at the same time, and only then, at the nursery of M. Frémont, jun., at Rouen, who received the plant at the same time that I did. The leaves of this *Cytisus* are exactly like those of the common laburnum, but a little larger; the branches are shorter, and do not shoot so rapidly as the laburnum, but the flowers are of the same colour and a little larger than those of the *Cytisus purpureus*; its bunches are not pendent, but erect, and with few flowers. The effect which this plant produces is much inferior to that of the common laburnum; but it forms a pretty variety, and a curious hybrid for amateurs. I think, however, that when the tree gets older, and the head becomes better furnished with branches, it will bear flowers more abundantly than at present.

Syringa vulgaris var. Charles X. I last year imported to this country a new variety of the common lilac tree, called Charles X., raised some years ago by M. Guillet, nurseryman at Versailles. Its wood is shorter and larger than the common sort, the flower panicles are larger, shorter, and extremely clustered; the flowers are of a lilac colour, and redder than that fine variety cultivated in France, under the name of *d'Ambournay*, which was raised above forty years ago from seed by M. Oissel of Rouen.

Two new Roses. I also send you two rose trees; the one is the *R. sempervirens major*, the flowers white and extremely double; the other is the *Princesse de Nassau*, obtained from seed in Paris, I believe, four years ago, and a hybrid between the Muscat and the Noisette roses, partaking most of the muscat. This last is also very double, from 2 to 2½ in. in diameter, and a little yellowish in the centre. I have sold it in this country for these two years past; it flowers abundantly from July to October and November.

The green-flowered Rose. I shall now say something about my green

rose, which is now no more. Four years ago, M. Rossignol, the gardener of M. Loisel of Bois Guillaume near Rouen, obtained a rose perfectly green. It has constantly flowered green till within the last two years. Last autumn it produced a fawn-coloured rose; and at last five or six grafted plants, which this gardener still possessed, did not flower green in the least. The mother stock alone produced three green roses out of thirty or thirty-six; and this evidently proves that this green variety can no longer be considered lasting. I have also other proofs of this. I last year planted an individual of this variety in my garden; it flowered white, and all those plants which I sold in London in the spring of 1829 flowered in the autumn of that year of the same colour. I therefore hope you will mention this, as I had no intention to deceive; but it would appear, and it is already acknowledged, that it requires three or four seasons of flowering to prove a new sort. A similar case happened with a rose at Rouen, which had produced flowers much variegated for two years, but the third year flowered unvariegated. I am, Sir, &c. — *Vallet Aine. Mr. Youl's Nursery, Old Kent Road, March 22. 1830.*

Varieties of Primrose, Oxlip, and Cowslip, cultivated in the Neighbourhood of Coventry. — Sir, The following is a list of such of the principal varieties of the primrose, oxlip, and cowslip, as I have observed cultivated in the gardens in this neighbourhood. It is offered to your notice, not by any means as a full and complete catalogue of all the known varieties, but in the hope of drawing the attention of cultivators to the subject, and, perhaps, calling into notice some of the varieties enumerated by our old English herbalists, and now nearly forgotten, if not lost to our gardens. Some of the following varieties (especially the double primroses) are well worthy of more care in their cultivation than is commonly bestowed on them. If the roots are divided in the summer or autumn, planted in pots, and protected under a frame from the severity of the winter, they will produce a profusion of flowers in the early spring, an ample recompense for the additional pains of the cultivator. It is hoped that some of your correspondents may be induced to add to the present list, so as to form a complete enumeration of the several varieties at present cultivated in our gardens.

PRIMROSE.	White.	<i>Hose in Hose.</i>
Single.	Dingy.	Yellow.
Common Yellow.	Lilac.	White.
White.	Crimson.	
Red or Crimson.	Carmine.†	COWSLIP.
Do. with calyx enlarged and partially colour- ed.	OXLIP.	Common Yellow.
Oxlip Primrose.*	Single.	Red.
Double.	Common Yellow.	<i>Hose in Hose.</i>
Yellow.	Orange-eyed.	
	White.	
	Lilac.‡	

It appears from an inspection of the above list, that the primrose is the species most apt to produce double varieties, and the oxlip and cowslip those termed hose in hose. — *W. T. Bree. Allesley Rectory, near Coventry, April 25. 1829.*

* That is, a primrose bearing its flowers on a common footstalk, like the oxlip.

† I received this by the above name, which, however, is not very applicable, the colour being a very dark crimson, like that of a Polyanthus. It is perhaps the handsomest variety of all.

‡ Raised from seed of the white oxlip.

Wattsia, *Nat. Ord. Cacti?* — Dr. Hamilton of Plymouth has named a plant in honour of his zealous and patriotic friend, Edward Watts, Esq., the British consul at Carthagen. Dr. Hamilton describes the plant as a thorny shrub, with fleshy leaves like those of *Pereskia aculeata*. He has sent us some seeds which we have given to our neighbour, Mr. Campbell, curator of the Comte de Vandes's botanical establishment here. — *Cond.*

The Stem of a Moss Rose, planted in a pot, with one shoot, containing roses with the calyx and footstalks covered with moss in the usual way, and another without any moss whatever, was sent us July 9th last year, by Mr. Ramsay, nurseryman, Chelsea. Such anomalies occur occasionally. Mr. Peacock of Edinburgh, it is said, can produce moss roses at pleasure. — *Cond.*

Alstrœmëria Simsii, and other species. — Mr. Sweet has now a plant of *A. Simsii* that has stood several winters with no other protection than a single mat thrown over the bed in severe weather; it flowered and seeded last summer, and has stood this winter so well, that it is now about 4 in. high, and has already thrown up sixteen strong shoots. *A. hirtella* has also stood out several years, flowering and ripening its seeds every year; he has also had out this winter, *A. Flôs Martini* and *A. Hookeri*, both of which have stood the winter well, and are now growing freely. (*British Flower-Garden*, for April, 1830.)

Calla æthiopica has remained throughout the winter in a pond in the garden here, and is now in flower. The water was frozen over with very thick ice for more than a week this winter; but, as the plant was about a foot and a half beneath the surface, the root was not injured: it was only placed in the pond last summer (1828) by way of trial. — *W. Quail, Gardener. Esthwaite Lodge, near Hawkeshead, July 19. 1829.*

Yellow and White Water Lilies, together with the flowering rush, would add much to the beauty of the water in St. James's Park and Kensington Gardens; if you would suggest the thing in either of your Magazines, I have no doubt it would be adopted. — *J. M—s. May 1. 1830.*

Quite the contrary; it is in the nature of things that those who are in power founded in the monopoly of the few against the many, and hence conscious of being looked on with a scrutinising eye by the discerning part of the public, should reject whatever would imply in the slightest degree their unfitness for possessing this power. If the parties whose business it is to attend to or ornament the parks should determine on planting water lilies in consequence of this hint, they will at least wait a year or two till it can appear to be done of their own accord. Exactly this course took place in the case of the men's lodges to the doors in Kensington Gardens, which were put up just about two years after we had suggested the idea in No. II. of this Magazine. The plants in the Chiswick garden are now naming, as we recommended in our Second Volume. Nature has provided obstinacy and indifference, as means of self-defence for those who cannot otherwise resist the attacks of reason. — *Cond.*

Gooseberry Shows of 1829. — Sixteen new sorts of gooseberries have been named and produced at the different gooseberry shows during the present year: five red, six yellow, three green, and two white, raised from seed. The following is a correct list of the four classes of gooseberries; I have selected six of the heaviest berries in each class, with the name of the person and place where they were exhibited: —

Red. Lion, 25 dwts., Mr. Fardon, Woodstock; Companion, a seedling, 24 dwts. 19 grs., Mr. Hoopley, Wybunbury; Huntsman, 21 dwts. 20 grs., Mr. Denerley, Cheetham Hill; Sir John, 21 dwts. 16 grs., Mr. Rose, Newark upon Trent; Top Sawyer, 21 dwts. 6 grs., Mr. Spencer, Derby; Statesman, 21 dwts. 3 grs., Mr. Chesworth, Nantwich.

Yellow. Leader, 22 dwts. 17 grs., Mr. Lovart, Nantwich; Gunner, 20 dwts. 19 grs., Mr. Brooks, Didsbury; Bonny Roger, 20 dwts. 10 grs., Mr.

Denerley, Hooley Hill; Globe, 20 dwts., Mr. Dingsdale, Huyton; Sovereign, 19 dwts. 20 grs., Mr. King, Radford; Teaser, 19 dwts. 20 grs., Mr. Prophett, Wistaston.

Green. Invincible, a seedling, 23 dwts. 14 grs.*, Mr. Brotherton, Wistaston; Peacock, 22 dwts. 19 grs., Mr. Fisher, Wybunbury; Tramp, 18 dwts. 13 grs., Mr. Reed, Hooley Hill; Providence, 18 dwts. 4 grs., Mr. Baker, Staffordshire; Ocean, 17 dwts. 15 grs., Mr. Eggleston, Newark; Angler, 17 dwts. 12 grs., Mr. Weldon, Cheetham Hill.

White. Ostrich, 21 dwts. 11 grs., Mr. Billington, Cheshire; First-rate 21 dwts., Mr. Piggott, Macclesfield; Eagle, 20 dwts, Mr. Fletcher, Prestwich; Nonpareil, 18 dwts. 11 grs., Mr. Seel, Little Heaton; Govener's, 19 dwts. 20 grs., Mr. Stringer, Congleton; Delamere, 18 dwts. 8 grs., Mr. Weldon, Cheetham Hill. — *M. Saul. Lancaster, Nov. 2. 1829.*

A Collection of Fruit Trees, from Buel and Wilson's Albany Nursery, North America, has been received by Mr. Saul. They consist of peaches, plums, apples, and pears, and Mr. Saul writes that they are the finest plants he ever received from any nurseryman either of Great Britain or America. (See p. 311.) — *Cond. Dec. 30. 1829.*

The Hanwell Souring, and a Seedling from Wheeler's Russet, sent herewith, may perhaps be interesting to Mr. Ronalds for his work. The Wheeler's Russet is an old apple, nearly worn out; I mean, we cannot raise healthy trees by grafting: when kept till February or March, we have been in the habit of considering it, for flavour, the very king of all apples; and the seedling raised from it partakes very much of the flavour of the parent, but it will not keep so well, and is very good fresh off the tree in autumn. — *W. T. Bree. Allesley Rectory, near Coventry, Jan. 9. 1830.*

A Single Melon Plant, in the garden of Mrs. Punno, Taplow Lodge, produced two fruit, the largest of which weighed $24\frac{1}{2}$ lbs., and the other 22 lbs., and what is rather singular, they both grew upon one vine. The largest fruit I this morning sent to a friend of Mrs. Punno's, residing at No. 62. Lincoln's Inn, where you probably may see it, should you think it worth the trouble of calling. If you think a short treatise stating the treatment the plant received, from its commencement to maturing its fruit, will be in any way interesting to the majority of your readers, I have not the slightest objection to do it in the best way that I am able. I had melons of all sizes last year from 1 lb. to $13\frac{1}{2}$ lbs., but never before saw any so large as the two I now speak of. — *J. Holland. Taplow Lodge, Sept. 14. 1829.*

We shall be happy to receive an account of Mr. Holland's method of cultivation. — *Cond.*

Collection of Melons and Water Melons from Russia. — Sir, I have the pleasure of sending you a choice collection of melons and water melons for your garden, and for distributing among your friends. You will find some new varieties amongst them well worth cultivating. I should wish very much that you would pay particular attention to the water melons, in order to grow them to that perfection to which they are grown at St. Petersburg; they are much more esteemed here than even the very best Cantaloup or Rock Melons. As you have been yourself some time in Russia, I need not tell you what a refreshing aliment these melons afford in the summer time,

* Mr. Brotherton has raised a number of new seedling gooseberries, and has adopted a plan by which he gets them very heavy, but, when sold to the other growers, they can never be made to weigh as much; so that at present the growers of gooseberries are not fond of purchasing new seedlings from the raisers, before they have been proved by others. And if your readers will consult the gooseberry show book back, they will find that a number of seedlings, after having been sold, never come up to some of even the old sorts.

and how superior they are to other melons. — *F. Faldermann. St. Petersburg, Dec. 20. 1829.*

List of the Water Melons; Cucúrbita Citrúllus L.; Arbusi, Russ.:—

1. Early sugar water-melon, with yellow flesh. Very good.
2. Sugar water-melon of the Crimea. Very excellent.
3. Water melon of the Crimea, with very sweet dark-red flesh.
4. Very large water melon of Astrachan. Of very good flavour.
5. Water melon from Casan. Very sweet, and large-sized.
6. Water melon from Casan. Very sweet, and the flesh green.
7. Water melon from the East, with green flesh. Very good flavour.
8. New very good kind of water melon from Tscheran.
9. A fine sort of Persian water melon, cultivated about Erivan.
10. Another fine sort of Persian water melon, cultivated about Erivan.
11. The favourite water melon of the Persians, with dark-red flesh, and very sweet.
12. Very early Persian water melon, of large size.
13. Very large Persian water melon, with dark red flesh.
14. Mirza Chosrefs water melon.

Musk melons cultivated in Russia; Cúcumis Melo L.; Dini Russ.

1. Very large sugar melon, from the south of Russia.
2. Melon from the South of Russia. One of the finest sorts.
3. Melon from the Crimea.
4. Sugar melon from Casan.
5. Round very good melon from Casan.
6. Sugar melon from Astrachan. Very sweet.
7. Very fine melon from Sarepta.
8. Tscheran melon. Very Sweet.

Of Persian Melons, Cúcumis Melo L., there are nine sorts in separate packets, marked 1 to 9, including the Dampsha, Datee, Goorquabee, and several others. — *F. F.*

We are extremely obliged to our intelligent and much-esteemed correspondent for these seeds, and also for his other communications and seeds received by the same conveyance. We shall send portions of the seeds, as far as they will go, to such of our correspondents as will undertake to give them a fair trial, and report to us the particulars, sending us a fair specimen of the fruit of each variety. One gardener may take one sort, and another gardener another; or several sorts may be taken; but we should think five or six enough for any one gardener to experiment with. Applications, on these conditions, may be sent to Mr. Charlwood, seedsman, Great Russell Street, Covent Garden, with whom we have deposited the seeds, and to whom we shall send the seeds of the fruits received for distribution in 1831. Mr. Charlwood has also seeds of the Sweet Indian Corn, sent by Dr. J. M. of Philadelphia, which we would particularly recommend to such of our readers as think of growing this article, as a garden vegetable, to be eaten green as in America. — *Cond.*

A new Variety of Wheat from China. — Sir, I have the pleasure of sending some wheat from China. It is considered as more productive, and of a better quality than the common wheat grown in Europe. I wish you would distribute it, in order that its value in different soils may be ascertained. The flour which it gives is much whiter than that from the common wheat. I should be happy to hear of its supposed superiority. — *J. Faldermann. St. Petersburg, Nov. 16. 1829.*

We have sent one fourth part of this wheat to Mr. Shirreff of Mungoswells, one fourth part to Mr. Gorrie of Errol, a portion to Mr. Smith of Woodstock Park, and the remainder to the editor of the *Brit. Farm. Mag.* and the Editor of the *Country Times.* — *Cond.*

SCOTLAND.

Caledonian Horticultural Society. — A General Meeting of the Caledonian Horticultural Society was held in the Physicians' Hall on the 3d of Dec. last, Daniel Ellis, Esq., first vice-president, in the chair. Mr. Ellis delivered a luminous and interesting discourse on the unpropitious nature of the past season, and on the best means of obviating the evils of our climate. We can only give a very meagre outline of the substance of this discourse. He remarked that "the coldness of the spring months, which so much retarded the blossom of the earlier flowers, that the usual period of competition was necessarily deferred, has continued through the months of June, July, and August, the mean heat of the day during those months not much exceeding 56°, and its highest temperature rising only for a few days to 70 or 75°. The more delicate fruits, therefore, as peaches and nectarines, were but very imperfectly ripened; but those of a hardier description, as apples and pears, which do not require so much heat to ripen them, were less affected in quality, and in quantity have surpassed the production of former years. The mean heat of the months of September and October was about 49°.

"From accounts received, it appears that the temperature has been pretty much the same in most parts of Britain; and, consequently, the periods at which fruits have ripened in different districts have corresponded more nearly than in former years. The chief defect in our climate, in regard to the production of fruit, was stated to arise from a want of heat at the period of maturation; and, therefore, our aim should be directed to hasten the progress of growth, and augment, as much as we can, the temperature at the ripening period. Great attention, therefore, should be paid to the nature of the soil and to shelter, both of which contribute much to ameliorate the climate; whilst the aspect, or exposition to the sun, should be such as will enable the plant to receive the greatest force of solar heat, and for the longest period. Ringing the bark of a branch, or removing a small circular piece of it, so as to intercept the descent of the nutrient matter, has the effect of accelerating the growth of the fruit in that branch; and experience has shown that blackening the walls, so as to increase their power of receiving heat, likewise hastens the progress of growth, and the subsequent process of maturation.

"Against the destruction of the blossom, which too often happens to our wall fruit in early spring, a covering through the night was recommended. The injury done at this period is produced, not by the cold of the night, but by the sudden action of the morning sun on parts previously reduced and enfeebled by cold; and the mischief may therefore be prevented either by raising the temperature of the plant before the sun shines upon it, or by intercepting his rays till the plant shall have acquired, through the medium of the atmosphere, a suitable degree of heat. In very unfavourable seasons, when the atmosphere is obscured, and the sun exerts but little force, no fruits can be expected to ripen in the open air, without the aid of walls heated by flues or by some other means. Even in better seasons they materially accelerate growth, and must ensure a more perfect maturation. Very fine Black Hamburgh grapes were this season ripened in the open air, by the aid of such walls, in the neighbourhood of Glasgow; and brought, in the market of that city, a price equal to those of the same sort grown in the hot-house."

A ballot took place for the admission of new members, when those proposed as candidates at the previous Meeting, among whom was the Right Hon. the Earl of Traquair, were all duly elected. The office-bearers for the ensuing year were then chosen, and prizes awarded as follows: —

For the best three sorts of pears, not generally cultivated in Scotland, with names, to Mr. James Smith, gardener to the Right Hon. the Earl of Hopetoun, at Hopetoun House. The kinds sent were Nouvelle Beurrée

d'Hiver, Délices de Chasselas, and Gloux Morceau. — For the best bunch of retarded grapes, any variety, with an account of the mode of management, to Mr. George Brown, gardener to the Earl of Lauderdale, Dunbar House. The variety sent was the white raisin, and the fruit appeared in fine condition. — Of the other article on the prize list of this day, the yellow Jerusalem artichoke (Topinambour jaune of the Paris market), no specimens were produced, from which it was concluded that this culinary vegetable had not yet been introduced into this country. — A large collection of very fine pears having been sent from the walls and dwarf standards at Luffness in East Lothian, the seat of Sir Alexander Hope, several of which being considered admirable, both for size and quality, the Meeting, on the recommendation of the committee, awarded an extra-medal for these to Mr. George Fowler, gardener at Luffness. — A specimen of West's St. Peter's Grape, sent by Mr. John Kinment, at Murie, was so exceedingly well retarded, that the committee recommended that the fourth volume of the Society's *Memoirs* be voted to Mr. Kinment, as a mark of their approbation, which was agreed to. — Some remarkable bunches of grapes were sent from Barnton garden, being the *third* crop, from the same vines, within twenty months, the vines continuing vigorous and healthy. — Among the extra-articles exhibited at this Meeting were some fine specimens of silver beet, blanched by means of sea-kale covers, from Mr. James M'Culloch at Balmuto. The specimens being very fine, the Meeting, on the committee's suggestion, awarded the 4th volume of the Society's *Memoirs* to Mr. M'Culloch, in testimony of their approbation. — Specimens of apples, the growth of the Shetland Islands, were presented by Mr. Purves of Edinburgh: they were the white or Keswick codlin, and highly respectable, as being the produce of the Ultima Thule. — Four kinds of excellent Canadian apples were exhibited by Mr. George Ross, gardener to the Earl of Dalhousie, at Dalhousie Castle. — Mr. Scott of Sinton sent specimens of some American apples; and a cast of one thought to be the Fall Pippin, the individual fruit from which the cast was taken weighing no less than 27½ oz. — Mr. John Govan, W. S., sent specimens of the Knohl-kohl, or turnip-rooted cabbage, from Cairnie Lodge, the seat of Colonel Foulis in Fife. — There were also exhibited, by Mr. Barnet, large and well grown specimens of two varieties of Knohl-kohl, early white and red. The seeds of these varieties were brought from Germany, by Mr. Loudon, in 1828, and by him presented to the Experimental Garden. — Mr. Thomas Kennedy, nurseryman at Nith Bank, Dumfries, sent specimens of a seedling apple raised by him, called the Nith Bank Pearmain, a rather showy table-fruit.

The table of the hall was decorated by fourteen distinct sorts of Chrysanthemum sinense, in full flower, from the Experimental Garden; also a plant, in a large earthen pot, of the blue raisin grape, trained spirally, carrying four bunches, and a plant of the Poonah grape trained in the same form, having several bunches, which had a fine appearance. Grapes grown in this manner were much admired at the last two fruit festivals of this Society.

From amongst the important horticultural information contained in the minutes read to this Meeting, we select the following, which came under the consideration of the committee and council on the 5th of Nov. last: —

Sir George S. Mackenzie exhibited a seedling apple, between the Nonpareil and the Manks Codlin, called the Achmore apple, which was considered juicy and good; also another beautiful seedling, shaped like the Nonsuch, not remarkable for flavour; and a very fine saccharine seedling, between the Codlin and Leasington in appearance. — Mr. George Shiells sent specimens of the black Hamburg grape, and of the white currant grape, from the apricot division of the flued wall in the garden at Erskine House in Renfrewshire, the property of Lord Blantyre. The former were ripe and well flavoured, and Mr. Shiells mentioned that he had sent 12 lbs.

to the Glasgow market, where the same price was obtained for them as for those grown in the hot-house. The committee were much gratified with this proof that, under judicious management, excellent dessert grapes may be produced against a flued wall in Scotland, even in a bad season, such as the past; and they voted the last published volume of the Society's *Memoirs* to Mr. Shiells, in testimony of their approbation. — A bunch of the Rhodes seedling grape was exhibited, the berries of which were beautifully black and well flavoured; and there was also submitted to the Meeting a model of an improved hoe, with a movable plate, invented by Mr. Lea, nurseryman at Worley, near Halifax, which, along with the specimens of grapes, had been transmitted by the Rev. James Armitage Rhodes of Horsforth Hall, near Leeds, who, the secretary stated, had also sent buds or eyes of the Rhodes vine for the Society's garden. Thanks were voted to the Rev. Mr. Rhodes for these interesting communications. — A letter was read from Mr. G. Ferguson, market-gardener at Prestonpans, describing specimens of a very large and beautiful pear, sent as being a modification of the Muirfowl Egg. These specimens were of excellent flavour, and very similar to the Muirfowl Egg. The secretary was directed to request grafts of this variety, and to offer grafts of other new or rare kinds in return. — Mr. Oliver at Dysart House sent some large and some small specimens of the brown Beurrée pear, produced from grafts which, at the same period, were put on an old and on a young Jargonelle tree. On the young tree, the large fruit sent were produced, and were plentiful; while the small fruit were from the old stock, and there the crop was scanty. Thanks were voted for this notice of so interesting an experiment. — Mr. John Ferme, Haddington, sent specimens of a very excellent seedling apple, supposed between the Golden Pippin and Nonpareil, for which thanks were voted, and of which grafts were requested. — Mr. James Dick, gardener at Crawford Priory, sent a specimen of unripe black Hamburgh grapes, from the open unflued wall, showing that this grape will not, in ordinary seasons, succeed without the aid of a flued wall.

Specimens of white kidney and pink-eyed kidney potatoes, both of excellent quality, seedlings from the purple kidney, received from Mrs. Selby of Twizel, in Northumberland, were sent by Dr. Greville, for which thanks were voted. — *P. N. January, 1830.*

A Quarterly General Meeting of this Society was held on Thursday, the 4th of March, Sir Henry Jardine, senior vice-president, in the chair. The Earls of Leven and Melville, Sir John Hay of Smithfield, Bart., Mr. Innes of Stow, and several other distinguished members of the Society, and promoters of the art of horticulture were present. Prizes were awarded as follows: —

For the best specimen of blanched succory, raised in a cellar or dark out-house, or in a hot-house, pit, or frame, to Mr. William Oliver, gardener to the Earl of Rosslyn, at Dysart House. — For the six newest and rarest hardy plants, cut specimens in flower, to Mr. Alexander Forrester, gardener to David Falconer, Esq., Carlowrie. The collection consisted of *Leucòjum vérum*, *Leucòjum carpaticum*, *Bulbocòdium vérum*, *Corydàlis càva álba*, *Chimonánthus fràgrans*, *Pòthos fœ'tida*, besides *Lithospérnum orientàle*, and *Boràgo orientàlis*. — For the best eight hyacinths, either in flower-pots or in water-glasses, red, blue, white, and yellow, two of each, to Mr. William Mylne, gardener at Drum to Gilbert Innes, Esq., of Stow. The kinds were: *red*, Comtesse de la Coste and Duke of Wellington; *blue*, Grande Violette and Quintin Durward; *white*, Prince of Waterloo and Prince Galitzin; *yellow*, Pure d'Or and Duchesse de Berri. — For the best six stalks of forced rhubarb, raised by a market-gardener, to Mr. William Inglis, gardener at Wester Warriston, being the first forced rhubarb produced by any market-gardener at Edinburgh. — No competitor appeared for the premium offered for hyacinths which had also flowered in Scotland

in the preceding year; but an extra-prize was awarded for a number of very fine hyacinths, grown in a novel manner, by Dr. Adolphus Ross, in his drawing-room. A quantity of moss, consisting of the most common kinds of *Hypnum*, was placed in a water-tight box, about 8 or 9 in. deep, into which the bulbs were placed in the end of September, without mould, and duly watered. The result of this experiment was highly favourable; and Sir Henry Jardine, in moving that an extra-medal be awarded for this novelty, complimented Dr. Ross on its success, for which the doctor, who was present, returned his acknowledgments. — Another extra-prize was awarded to Mr. John Mathison, gardener to the Lord Register of Scotland at Arniston House, for a fine specimen of rampions (*Campánula Rapunculus*), used as a salad, and also as a second-course vegetable. — A very beautiful specimen of an uncommon variety of the Seville orange, which grows to a large size, was sent from the garden of Mr. Buchanan of Drumpellier, grown by Mr. Thomas Carsewell, his gardener. This variety is said to be very prolific. The fruit was attached to a small bough; and close by the fruit was a flower, which added to the interest of the specimen.

Besides the competition flowers, a great many very fine hyacinths were exhibited from Drum garden. A number of early tulips and hyacinths were sent from the experimental garden, as also a very beautiful plant of *Azalea ledifolia*, or white Chinese azalea; which is one of the handsomest of the tribe, the petals being larger than those of the more common kinds, and of a pure paper-white. An excellent specimen of the *Phœnócoma prolifera* also graced the table of the hall; which, both in point of beauty and fragrance, was, considering the early period of the year, as well decorated as we ever recollect to have seen it. (*Edinburgh Advertiser*.)

Edinburgh Botanic Garden, December 10. — The following new or rare plants have lately flowered here: — *Begonia diversifolia*, *Gompholobium polymorphum* var. *luteum*, *Sphacele Lindleyi*, *Lobelia mollis*, *Lobelia rugulosa*. (*Professor Graham in Jamieson's Journal*, December, 1829.)

New or Rare Plants which have lately flowered in the Neighbourhood of Edinburgh, March 10. 1830. — *Cestrum bracteatum*; *Conostylis aculeata*; *Elephantopus Martii*, the seeds received from Rio Janeiro; *Lobelia Kraussii*, from Dominica. — *Nepenthes distillatoria*, fœm. This plant is 16½ ft. high. It has ripened seeds, from which several young plants have been raised. "It appears that the pitcher is an appendage to the middle rib of the leaf, the leaf originally consisting of the ciliated wings of the pitcher only, but is subsequently elongated downwards, and at last the membranous expansion along the pitcher degenerates into two prominent nerves, and for a considerable way along the middle rib is entirely removed, leaving this to act as a long simple cirrus." (*Jamieson's Jour.*, April, 1830, p. 380.)

Ripe Grapes were cut in the garden of Culzean Castle, Ayrshire, on March 8. (*Ayr Advertiser*, March 25. 1830.)

Lord Dunmore's Seedling Pears are the finest productions of Scotland, and equal to the best of those raised by M. van Mons. — *P. N. Edinburgh*, January 6. 1830.

Miniature Orchard. — I have been so much pleased with the plan of a miniature orchard that I have prepared a quarter of ground for a trial, although I don't meant to plant the trees so close, and will introduce a gooseberry bush between each tree. — *W. M. Argyleshire*, Nov. 6. 1828.

Orchards. — In your *Encyclopædia of Gardening*, article *Orchards*, you are quite correct as to the Clydesdale and Carse of Gowrie orchards; but you say there are a few smaller ones along the base of the Ochill Hills. I have sought for the Ochill Hill orchards but cannot find them, and I therefore think you have been misinformed. The Ochill Hills form the southern boundary of Strathearn, and there is a range of lower hills, which run along the north side of that strath, and on their south slope are the old orchards

of Aberdalzie, Mailer, Kirkton, Hillton, Moncrieff, Fingask, Rhynd, Ballhepburn, and Elcho. None of them are of large extent, but all of them are aged. — X. Y. Z. *Near Renfrew, May 6. 1829.*

Sir George Ogilvy's Garden at Banff in 1639. — In the year 1639, during the civil wars between Charles I. and his Scottish subjects, a General Monroe, who was ravaging part of the north of Scotland, returned the keys of Strathbogie to the Marchioness of Huntly, set fire to his camp, and marched to Banff, the magnificent seat of Sir George Ogilvy, which he destroyed, together with his fine garden, then the best in Scotland, enclosed with excellent stone walls, and well stocked with fruit trees, all of which he cut down, nor did he leave a hedge standing. Sir George was then with the king, who, when the disaster was related, remarked, "as for the house it mattered not much, money could build it up again in a short time; but it was cruel to destroy his garden, which years could not repair." (*Aikman's History of Scotland.*) — *Id.*

Temporal Happiness. — It appears that Dr. Chalmers intends to give lectures to the Edinburgh students of divinity on political economy as connected with theology, and on the animal as well as the moral and religious nature of man. This is highly commended in that excellent paper the *Scotsman*, and especially in a letter to the editor published in the number for April 21. That letter is full of important truths, showing how much a man's opinions on most subjects depend on his organisation, on the circumstances with which he is surrounded, on the state of his health, and on the qualities of his food. The first principles of Mr. Owen, as lately delivered in his Sunday lectures at the Mechanics' Institution in London, are exactly the same; only Mr. Owen pushes them as far as they will go, anticipates the state of things that will be the final result of their application, and thereby has drawn down on himself the charge of being an advocate for materialism, and incurred the epithet of benevolent madman; while the more prudent correspondent of the *Scotsman*, as well as the editor of that paper himself, though entertaining, as we believe, the same fundamental principles as Mr. Owen, maintains a reputation for wisdom and philosophy. Such are the different ways of men. Great good, however, we are firmly persuaded, is effecting by both parties; but it is hardly more safe to drop a word in favour of Mr. Owen at present, than it was three years ago to praise Mr. Bentham, now acknowledged by Mr. Brougham in Parliament to be the first jurist of the age; not quite a year ago the *Times* newspaper called him an old driveller. — *Cond.*

IRELAND.

Arboricultural Society. — A prospectus for a Society for promoting planting and the care and management of wooded lands in Ireland, has been sent us, with the names of the patron, president, vice-presidents, and committee, all of the first respectability. The object of the Society is stated to be, "to collect, embody, and diffuse scientific information relative to the forming of plantations, and the care and management of wooded lands in Ireland." Three pounds annually, or twenty pounds paid down, constitute a member. A committee of fifteen are to conduct the affairs of the Society. The secretary is C. W. Hamilton, Esq., 37. Dominick Street, Dublin.

"Prospectus. In Ireland there are woods and plantations belonging to individuals, worth many thousand pounds, and collectively worth millions, which are either totally neglected, or injured by injudicious treatment. The neglect consists in the omission of proper draining, fencing, thinning, pruning, copping, &c., in leaving briars and other detrimental undergrowth upon the surface, and in a general deficiency of any scientific principles of management. The injury consists in improper felling and thinning, lopping for fire-wood and fences, the admission of grazing cattle, and the employment of ignorant persons as labourers and superintendents.

“ The advantages which this Society anticipates, from a greater attention to the increase and superior management of wooded lands, are, the improvement of wastes; the employment of a large number of the peasantry; the addition of ornament to the country, as well as of value to farmed lands, by the production of shelter and an abundance of useful timber; and the consequent increase of individual property and national wealth. That these advantages are not generally understood, the face of the country sufficiently demonstrates; and where so large a proportion of labour and expense is devoted to agriculture, and so little to the cultivation of forest trees, it is not wonderful that the landed proprietors of Ireland should, to use the words of Evelyn, ‘ oftener find occasion to fell down and destroy their woods and plantations, than either to repair or improve them.’ It is, therefore, highly desirable that the subject should be brought more frequently and directly under public notice and discussion, and that information upon it should be collected from as many sources, and distributed through as many channels, as possible. To do this is the object of the present Society, and the proposed means of effecting that object are, —

“ 1. To establish an office in a public and central situation in Dublin; and to engage a scientific agent to attend there at convenient hours, for the purpose of collecting and communicating to members, and to persons acting on their behalf, all possible information connected with the objects of the Society. 2. To keep in the office patterns of tools and models of machinery, of the best and most approved construction. 3. To open and carry on an extensive correspondence both at home and abroad, from which the Society may expect to derive valuable information; and perhaps to bring forward the interesting results of its enquiries in occasional publications, so as to diffuse through the country a knowledge of the principles of the science. 4. To collect for the use of the Society, and for the promotion of the science, a library of the best publications which have been written upon the subject in various languages.

“ It is not intended that the Society should embark in speculation, offer premiums, recommend woodmen, or in any way engage in conducting the business of individual subscribers, which might involve it in heavy expenditure and responsibility. The establishment of similar societies has proved conducive to the promotion of almost every other branch of knowledge. If any improvement has been discovered in the treatment of the inferior vegetable productions, it is directly communicated to, and disseminated by, farming and horticultural societies; new plants are collected from every part of the globe, and the most valuable are selected for cultivation; experiments are tried and recorded, that their success may be followed up, or their failure made known, in order to deter others from wasting time and capital in a repetition of similar attempts; queries are proposed and answered, and a useful spirit of emulation is thereby excited through the kingdom; the experience of each individual being thus rendered of use to the community. But with respect to the noblest of vegetables, both as it regards the beauty and riches of the country, the case is widely different. In the cultivation of forest trees, there is no connection between the efforts of individuals; every one tries his own experiments, and is too often discouraged by the failure of those attempts, which, had they been assisted by the experience of others, might have produced the most beneficial results. It is, therefore, presumed that the establishing a Society in Ireland for the purposes above stated, will be of essential service to the country, by giving an impulse to improvement in the management of woods and plantations, whilst it will also combine with its other advantages one of vast and paramount importance, the continued and profitable employment of a large number of the peasantry of the kingdom.”

It is commonly alleged in England that the societies which have hitherto been established in Ireland have done very little good, and that those which

have been supported by government, as the Dublin Society, the Cork Institution, &c., have degenerated into mere jobs. Whoever wishes to know something of the state of jobbing in Ireland, may turn to the *Scotsman* newspaper of Jan. 6. 1830, where, in a review of the *Report of the Commissioners of Revenue on the State of the Irish Post-Office*, will be seen an account which is enough to make a man exclaim, that, if the peasantry of Ireland are in a state of physical degradation, the gentry are not less degraded morally. We do not believe there is any thing in the world equal to it, except in Russia. However, as the Society proposes to confine itself to collecting and diffusing arboricultural knowledge, we cannot see how it can possibly do harm. An active, scientific, and practical agent, by travelling through the country, might possibly effect something by instructing local foresters and woodmen; and if proprietors were very anxious for the improvement of their woodlands, such professional foresters as Pontey in England, and Sang and Cruickshanks in Scotland, would soon be called into existence in Ireland, without the aid of any society: in fact, there is our correspondent Fraser, who, we will venture to assert, understands vegetable physiology, as applicable to trees and the whole management of plantations, as well as any man in the two islands. But, from what we can learn, the foresters of Ireland are much too ignorant and conceited to take instructions, or be put out of their routine practices by strangers; and therefore the grand and essential thing is to enlighten the rising generation generally, to begin at the beginning. In the mean time, every temporary exertion is worth something; and the mere circumstance of calling public attention to the subject, and bringing people together, or into communication, who are occupied with the same pursuit, is certain of doing good. In these views, we hail the appearance of the Arboricultural Society, and wish it every possible success. — *Cond.*

Mr. Fraser's name, we in this country regret to see, is falling into the middle distance of your pages. He has left much undone, which might have been of real use to the county where he resided; I may add, to gardeners and Ireland at large. Knowing your Magazines to be widely circulated in this kingdom, I hope you will call upon some of your intelligent readers to send you an account of the places they have visited, which might be the means of operating upon both the employer and the employed. Start the subject, and I have no doubt of its success. I am, Sir, &c. — *L. L., January, 1830.*

We have repeatedly done so, but there seems to be something in Ireland which breeds laziness; there seems to be a want of poor rates, to excite to activity and industry. As far as gardening is concerned, absenteeism causes the blight. To the peasantry poor rates would be a real good; and if the landlords would meet them by the cottage system already laid down (not a forced cottage system), and by giving every cottager a loom, which might reduce the quantum of land, they would have nothing to fear. — *Cond.*

Poor Laws. — We have not the least doubt that had a system of poor laws, similar to that which has been established in England, been established for the same period in Ireland, it would, by giving the landlords and gentry of the country a deep pecuniary interest in the repression of the numbers of the poor, have powerfully tended to prevent that splitting of farms, and excessive increase of the population, that are the prime causes of all the evils of Ireland. (*Ed. Rev.*)

Mildness of the Climate near Belfast. — Sir, Having received much pleasure from your Gardener's Magazine, and being passionately fond of cultivating shrubs and flowers, which I have been in the habit of practically doing myself in a small garden as my greatest amusement, I am induced to give you some remarks, which, if you please to make use of in whole or part, you are very welcome. I think this part of Ireland, on the sea-shore,

about three miles from Belfast, latitude $54^{\circ} 35' 42''$ N., must be peculiarly favourable to gardening. I find many plants grow well here, which I have observed in the Gardener's Magazine are spoken of as rare in other places : for instance, *Fúchsia coccínea*, as bearing berries in a green-house, from which young plants spring ; and then it is observed, it might perhaps be treated as a hardy annual. My old plants ripen seed in the open ground, and never get any protection, and I have them in the coldest situations. I never thought of sowing the seed, as I find the cuttings grow as well as those of the common willow. I cut some plants down to the ground about January, and these cuttings I put very thickly together into any part of the garden, and give them no care : almost every plant succeeds and flowers that autumn. The broad-leaved myrtle I have as an edging as low as box, and as hedges in my garden of all heights, from 6 in. to 12 ft. My 12-ft. hedge is on a south wall. When Dr. Haliday came to this place twenty years since, it was 2 ft. high. It has never had even a little straw laid over the roots in winter, and it flowers beautifully. It is bushy from the ground to the top of the wall, with which I always cut it even about April. In the summer it shoots a foot and a half above the top of the wall : it is 5 ft. in breadth from the bottom to the top, and spreads 3 ft. over the door-case on one side. From this I have taken all my other plants, observing to cut off a flowering branch, otherwise it is very long before they come into flower. I always strike them in the open ground, and many have been put down at Christmas ; in fact, I give them no more care than the *Fúchsia*. I have at least forty plants now, and many in fine flower this day (Nov. 11.). The narrow-leaved myrtle is also in the garden, and has twice flowered ; it is not protected. I cannot go to any great expense, but I try every plant I can get a cutting of, and often succeed where many who take great care and trouble do not. The snowberry I struck by a cutting in the open ground, when the nurserymen were asking 7s. for a plant. The white double primrose is quite hardy here. *Tigrídia Ferrària* I plant in the garden in February ; its seeds are now quite ripe ; this winter I will leave some roots in the ground : it seems so far to have changed its habit as to open the flower at all times in the day ; it even did so at six in the evening this year. *Mirábilis longiflòra* stands the winter here well, and flowered the year it was sown. Scarlet-flowered *Cyrílla*, sown in the garden, is now in fine flower ; as are also a variety of pelargoniums and *Cinerària*, turned out of the green-house to take their chance. The *Althæa frutex* flowers well in many places here. I have a very small green-house, nearly all glass, but with no artificial heat. I reared in it *Crássula coccínea* and *álba* ; the seeds came up in a parcel of heath seeds from London (the latter all died) : the crassulas flowered beautifully. My fine pelargoniums are later in flowering, but are in general in better health, than where great heat is used. The Madagascar periwinkle flowered from a cutting. My gardener has also been successful in flowering the *Amarýllis vittata* in it : he was laughed at for supposing it possible ; but the fourth year I had a fine plant, the stem 2 ft. high, and five handsome flowers : the second year it was not quite so fine. This year I have a second bulb from it, which I hope will flower : one of the bulbs I have just looked at ; it has now a leaf a foot long, owing, he supposes, to the experiment of not treating it as he did at first. If it does flower, I shall send a communication to the Gardener's Magazine. I know he does not give at any time any thing like the quantity of water which some of your correspondents recommend ; but he says, not having heat, the plant does not require it. My green-house is chiefly managed by him, and he is quite anxious to acquire information relating to his profession, and very fond of it ; but, except in regard to the *vittata*, every fact I state is from my own knowledge and experience. There are now seven beds nearly blown of the scarlet Chinese rose, budded on the 20th of July on the common double white rose ; and I had the rose unique, Tuscany, moss-white, and double yellow-flowered on the Chinese

blush, budded rather late last year. I think it is the best stock. The situation was too sunny for the yellow; two buds only flowered perfect. I have it also budded on the scarlet Chinese. I have long been trying to discover what is the cause of the variation of the colour in the hydrangea: it is not the strong black soil that gives the blue; for in that, for four years, I have a fine red plant, taken from a blue one; and in a sandy soil (which is the general soil here) I have a blue one. I once thought, as you observe, that the plant requires to be old before the blue colour becomes prevalent; but I am convinced that will not always hold. I have not observed any of your correspondents remark the very neat method, French I believe, which a friend described to me, of striking slips of carnations or pinks, particularly if to be sent any distance; and I think it would answer well for pelargoniums, gilliflowers, &c. It is thus:— A strong shoot is just pierced through a joint, or as if going to be layered; have some pieces of the lead tea is so commonly put up in now, and twist it round the shoot (*fig. 75.*); tie the bottom close with bass mat, and then fill the lead full of proper compost, now and then watering. If the plant is tall, put in a stake, and tie it firmly: in six weeks it will be well rooted, and may be cut off below the lead, and sent any distance. This I have practised for two years, and find it succeeds well; but it does best if the plants are pretty high, which carnations are generally here. I beg to give another instance of either the soil or climate. Two years ago a root of the orange lily threw up a stem which twisted from the ground and flattened to an inch and a half in breadth, was 7 ft. high, and had 130 flowers on it. I had the dry stem till very lately.



— *M. H. Clifton, near Belfast, Nov. 11. 1829.*

We are much gratified with these proofs of the mildness of the climate of Ireland, even in the north. We have no doubt the whole or the greater number of Australian, Japanese, and Chinese plants might grow there; many of them with no protection, and others with the same degree of protection which is given to the orange and the lemon in the north of Italy and in Devonshire. As our correspondent cannot have many neighbours who have extensive collections of exotics, we take the liberty of recommending such of our amateur cultivators as have spare young plants, and Mr. Mackay of Clapton, to send a few to Clifton, for trial in the open garden. The result will be something for all parties to hope for; and it will be given, we have no doubt, with readiness and pleasure by M. H. in this Magazine, in say three years after receiving each parcel. We are delighted to find a lady deriving so much enjoyment from her garden. We have just had the pleasure of showing the London gardens to a lady of similar pursuits from the north of Scotland, who has created a garden there, and who is not only a botanist and a naturalist, but who can and does perform all the operations herself, even to digging and wheeling. — *Cond. May 22. 1830.*

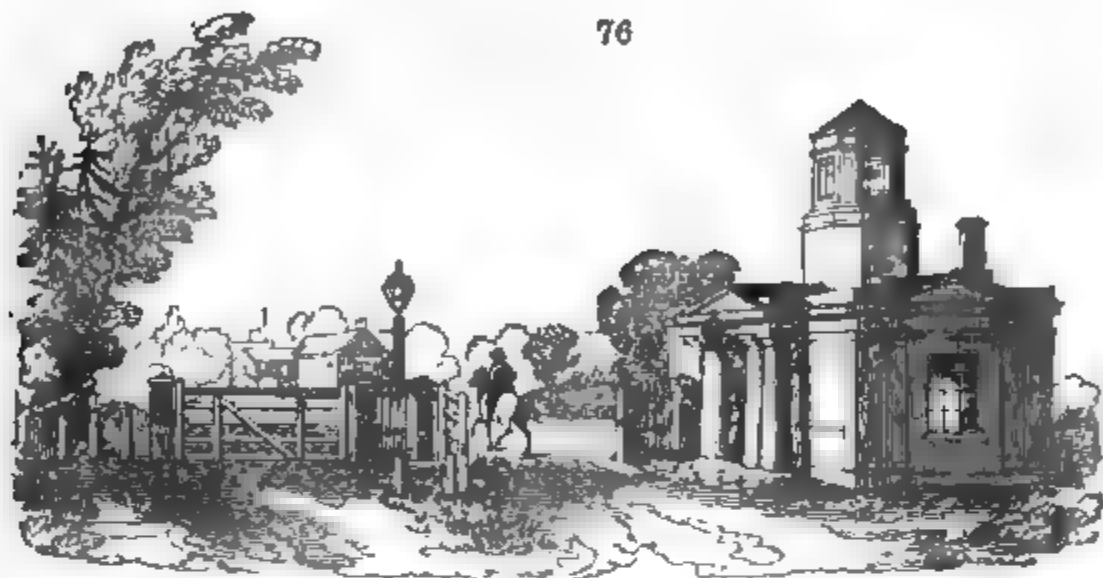
Castlemartyr, County of Cork, the Residence of the Earl of Shannon. — Sir, In consequence of the notice taken in your *Encyclopædia of Gardening*, in the list of noblemen's and gentlemen's seats in Ireland, of Castlemartyr, the residence of the Earl of Shannon, I was induced to visit it a few days ago, and was so highly gratified by an inspection of it, that I shall attempt to give you a brief account of its varied beauties, which, if you deem worthy of insertion in your interesting Magazine, may prove a stimulus to future communications on similar subjects. This magnificent demesne is entered by a plain gateway with castellated piers, the external appearance of which would not lead a visitor to expect much internal beauty. He is, however, agreeably deceived immediately on entering, by the view of a distant bridge and waterfall, terminating in a splendid canal, or rather basin, along the banks of which his walk now commences. The effect is much increased by the appearance of a number of swans, which approach strangers with great familiarity. Amongst them we were highly pleased to notice, for the first

time, that “*rara avis in terris*,” the black swan of Van Dieman’s Land; with its splendid red bill. Closely observing his habits, he appeared to us a much more lively and animated bird than the white; and such we learned to be the case from a guide who attended us, and is in the habit of noticing him daily: the neck did not appear to be quite so long as that of the white swan. Amongst them were a number of fine geese, which the guide called “American.” Passing the bridge under which the water falls, we soon arrived at the house, which appears very old, and fast going to ruin: the rooms are spacious, and contain some excellent paintings. On remarking to our guide that the house appeared much neglected and going to decay, he said, “he supposed His present Lordship would not rebuild it, but that there was every probability of Lord Boyle’s (the eldest son) doing so, as he was greatly attached to the place, and always quitted it with tears in his eyes for England, where the family chiefly reside since the death of the amiable countess, who seems to have been almost adored by the people here. Our guide added a piece of intelligence, which to us was most unwelcome, “that, since her death, about seven years ago, the chief flower-garden, in which she spent most of her time, has not been entered by any person but the gardener and the assistants, though it is said to be kept in as neat order as ever.” As a recompense for this disappointment, he conducted us over a wooden bridge, on a distant part of the canal, to another garden most delightfully situate on the side of a hill gently sloping to the south, and embosomed in a thick wood, through which a winding pathway, planted on each side with the choicest evergreens, led to the entrance gate. Here we were delighted to find a number of half-hardy shrubs, apparently acclimated in a high degree, if we were to judge from their great size and healthy condition; amongst them the *Magnolia grandiflora* and *conspicua*, *Kalmia latifolia*, myrtles of every kind, with numerous others. I never saw the Chinese roses, *odorata* and *indica*, half so large or healthy as against the green-house wall, with a south-eastern aspect: perhaps the yellow rose would answer equally well here, if tried. In the green-house, or conservatory, which is indeed a mean one, and ill suited to so extensive a place, we observed a very fine *Nerium splendens*, *Brugmansia arborea*, and *Acacia*, I believe, *decipiens*. In mentioning the acclimated shrubs in the garden, I omitted *Camellia japonica*, which seemed quite as hardy as the *Prunus Lauro-cerasus* in its neighbourhood outside, and forming as numerous blossom buds, and as forward, as some under glass. The myrtle is said to thrive particularly well in this part of the country, which lies within four or five miles of the southern coast, from which sea sand is procured for its cultivation. Some that I observed at Youghall, near this, were at least 20 ft. high and well furnished, and required no protection during the winter season. The *Arbutus Unedo*, our favourite native, was here, on the banks of the canal, in higher perfection and vigour than I found it at Killylarney. A vast number of the inhabitants of the sweet village of Castle-martyr, adjoining the demesne, are kept employed almost constantly, not a withered leaf being allowed to remain beyond a day on the walks; indeed, it exceeds in neatness of keeping many places of note which I have visited in England. — A. B. C. Cork, Oct. 5. 1829.

ART. IV. Rural Architecture.

TOLL-GATE Houses in the neighbourhood of London have been a good deal improved within the last seven or ten years, and it were much to be wished that only the most elegant compositions of this kind were erected all over the country; because they could not fail to have an influence on the general taste in matters of architecture. Toll-gates and parochial or village schools ought to be particularly attended to as examples of architectural

taste; because they are inevitably seen by every body, and the latter when we are young and open to impressions. We should be glad if some of our architectural readers would send us perspective views or isometrical elevations of this description of buildings, and in the mean time we shall make the commencement by giving a view of a toll-house lately erected at Edgeware. (*fig. 76.*) On the summit of the cupola of this house there was

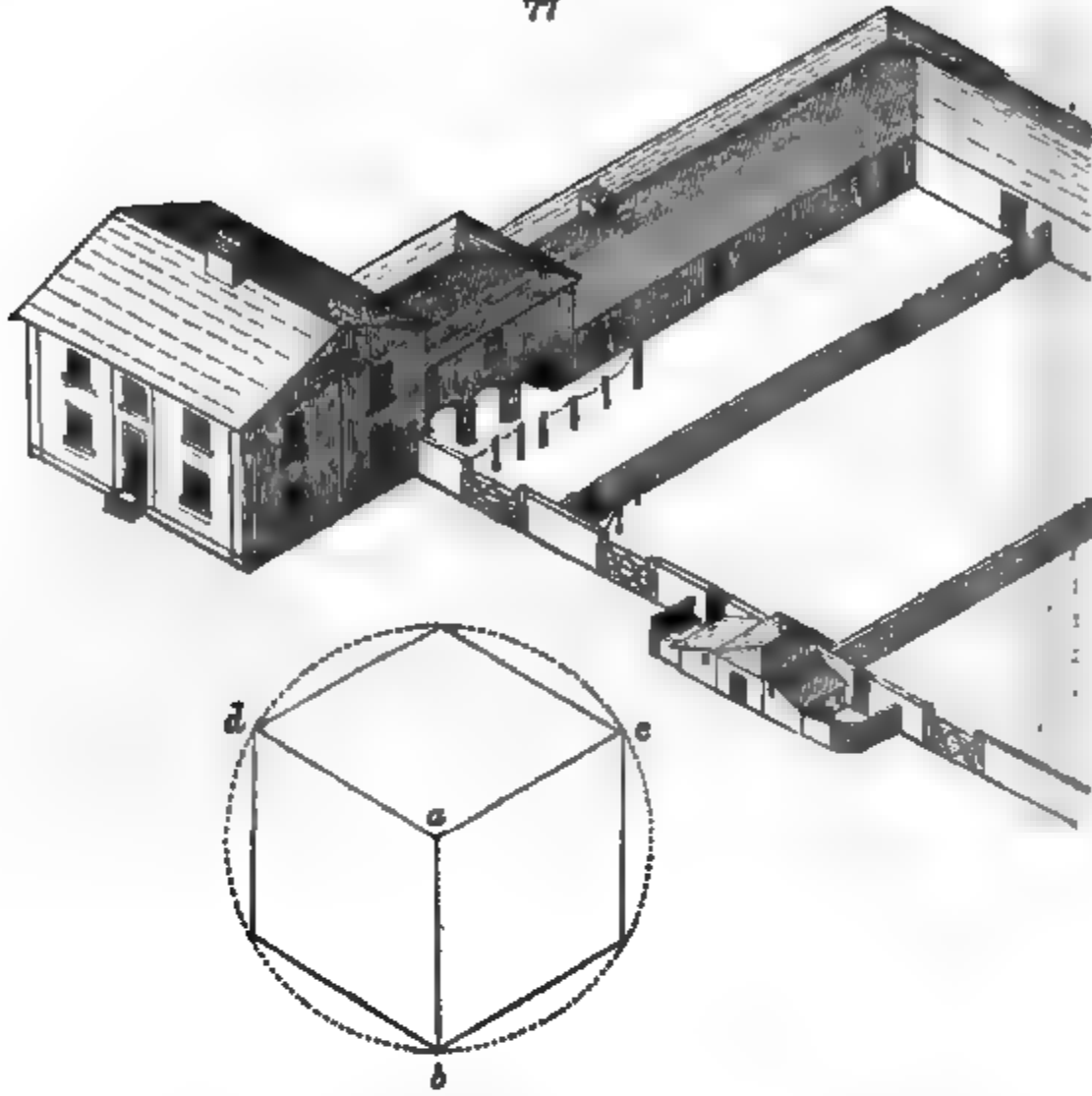


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originally a lamp with three burners and three separate reflectors. Two of the reflectors directed the light along the road in opposite directions, to show what might be coming or departing on either hand; the third reflector threw the light directly across the road, and down on the gate, for the purposes of the gate-keeper and those passing through. After this light had remained between two and three years it was taken down, as being too brilliant, and as having frightened some horses; but it surely might have been softened so as to be retained. Where there are two gates, a lamp-post is very properly placed between them, as is now done at Edgeware, which answers all the purposes of the cupola and triple lamp formerly there.

Isometrical (*isos* equal, and *metron*, measure) *Perspective*. — As some of our young readers may not clearly understand what is meant by this term, and as that description of perspective is particularly adapted for drawing plans of kitchen-gardens, we give the following extract from *Waistell's Designs for Agricultural Buildings*: — “Isometrical perspective is a term given recently by Professor Farish of Cambridge, to a projection made in rays parallel to the diagonal of a cube upon a plane perpendicular thereto. This is a comprehensive and useful method of exhibiting the different parts of a homestead, and any person moderately acquainted with drawing, if they make the attempt, will find it extremely easy to perform; nothing more being required than to divide a circle into six equal parts, which may be done with the radius; and draw the hexagon and three radii, one radius to every other angle, to represent a cube. (*fig. 77.*) All the vertical or plumb lines in any design are then to be drawn parallel to *ab*; all those in the direction, say north and south, parallel to *ac*; and all those at right angles or perpendicular to the last, or in the direction east and west, parallel to *ad*; and the several heights, lengths, and breadths, being taken from a scale of equal parts, and set off, and lines drawn in these three directions, the projection is produced. The position of any point, or the direction of any other line, may be found, by finding where the first would fall upon any plane parallel to either of the three sides of the cube, and where the latter, if produced, would cross any line in the three directions.” (*Designs, &c.*, p. 91.)

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The Duke of Wellington's House, Piccadilly, in the garden front (fig. 78.), presents what we think may be called one of the most disagreeable anomalies in regular architecture we ever beheld. We do not recollect any build-

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ing in London that to our eye produces so bad an effect; certainly nothing so offensive in any building in which two elevations out of three are of such

perfect dignity and beauty. Though no reason which it is in the power of man to give would convince us that this northern elevation was justifiable on any received principle of architectural design, yet, we must confess, we should like to know what reason prevailed with the architect so as to induce his consent to the disposition of the windows in the projections as seen in the sketch. (*fig. 78.*) We will not allow that it was required by the internal arrangement, because we know what that arrangement is; and we know also that some of the windows are false, and if some why not more, or not so many, or a different size or disposition? — *Cond.*

ART. V. *Domestic Economy.*

BREWING Beer from Mangold Wurzel. — Mr. Reuben Earnshaw, of Kirkburton, near Barnsley, lately made an experiment by brewing the roots of the mangold wurzel. He says, that when the roots are sliced and drained through a sieve, and treated by a process the same as in ordinary brewing, adding two pounds of treacle to a bushel of the roots, they will produce as much good liquor, with a quarter of hops, as four pecks of malt. (*Scotsman*, March 6. 1830.)

Spirit from the Berries of the Mountain Ash. — The berries, when perfectly ripe, are first exposed to the action of cold in the open air, then put into a wooden vessel, bruised, and boiling water poured on, the whole being stirred until it has sunk in temperature to 82° Fahr. A proper quantity of yeast is then added, the whole covered up, and left to ferment. When the fermentation is over, the liquor is to be put into the still, and drawn over in the usual way. The first running is weak and disagreeable in flavour; but being distilled from off very fresh finely powdered charcoal, in the proportion of 8 or 9 lbs. to 40 gallons of weak spirit, a very fine product is obtained. The charcoal should remain in the liquid two or three days before the second distillation. (*Brande's Quarterly Journal.*)

The berries of the mountain ash resemble those of the grape, in containing sugar and natural yeast, in the due proportions to produce a perfect and spontaneous fermentation. The juice being expressed and left to ferment, when the wine is perfect it may be distilled, and an excellent brandy will be obtained, at the rate of about a pint of spirit to a gallon of juice. (*Dr. Lardner's Cyclopædia*, vol. iii. *Dom. Econ.*)

No gardener ought to be without a bottle of whisky, or of some other wholesome spirit. The berries mentioned abound in most shrubberies, and by borrowing a small still from the housekeeper they may easily be turned to account. This hint, we should hope, will be sufficient. — *Cond.*

Brandy [and probably Spirit of any Kind] is found an antidote to beer, and it has been proved by medical men in France, that a man intoxicated by drinking the latter will be rendered immediately sober by a glass or two of the former. Intoxication by either wine or spirits is counteracted by vinegar. Hence Lord Byron preferred a glass of port and a glass of claret alternately to either alone. — *Cond.*

The Croup, one of the most dangerous and rapid of the diseases of children, may be effectually checked by the external application to the throat of equal parts of camphor, spirits of wine, and hartshorn, well mixed together. — *J. M. Edinburgh, April 2. 1830.*

A new Corn Mill is now exhibiting at No. 175. High Holborn, London, of which much is said in commendation. The mill occupies a space but 5 ft. square, and is perfectly portable. It is propelled by a single horse, and by one operation will grind and bolt 1 cwt. of grain per hour. The firsts, seconds, pollard, and bran perfectly separated. The stones are formed upon a new principle, of which the basis is the French Burr. — *Cond.*

ART. VI. *Hints for Improvements.*

PLANTED Cemetery at Liverpool. — We have heard something of a very remarkable cemetery, which has been formed at Liverpool, and planted by Mr. Shepherd: we should be much obliged to Mr. Shepherd, or to any other gentleman in the neighbourhood, who would send us a full account of it, accompanied by a plan and a list of the trees. No gardens want dressing so much as those of churches. If we could purchase 500 acres of the poorest possible dry soil within twenty-five miles of London, we would lay it out as an arboretum and place of burial for all sects and parties, and, were it not for the church, we should say for the metropolis. A railroad and locomotive engine might convey corpses thither once a day, and company at all hours. Those who had near relations buried in the arboretum, should be free of it for seven years; all others should pay a shilling each. The requisite chapels for different sects would serve as ornamental buildings; the poor soil would become enriched and the trees would thrive; and at half the burial fees now taken the establishment would pay. — *Cond.*

The Establishment of a Fund for the Relief of poor Gardeners and their Widows, as proposed by Mr. French (Vol. V. p. 729.), is a good idea, and deserves support. I have recommended that London should be fixed on as the situation for a central society, and there should be agents in the principal country towns; or that it should be an understood thing, that the secretary of every provincial horticultural society should be in communication with the secretary of the central society. As few gardeners belong to other benefit societies, most of them would readily join this one, and I also think it would be handsomely supported by honorary members who are friends to gardening, and by nurserymen and other commercial gardeners. I hope this matter will not be lost sight of by my brethren, and offer my hearty thanks to Mr. French for having thrown out the suggestion. I am, Sir, &c. — *James Rollins. Liverpool, Jan. 7. 1830.*

A Substitute for Glass in Hot-houses. — Dining, a few days since with a scientific friend, he, previously to our summons to the dining-room, enquired if I would like a peep into his vinery. Replying in the affirmative, and that it was a hobby of mine, we entered it. My attention was more caught with the contents of the house than the materials of its structure; but on his informing me that there was not a foot of glass in it, I looked up, and not perceiving any difference from glass in the light or colour, I did not know what he meant. On closer examination, I found that the whole of his vinery was lighted with a vegetable production from Russia, which I think my friend called *Tout* [Talc? a mineral, however], and described it as answering every purpose of glass. No hail storm, nor even the stroke of a hammer, can break it; fire has no effect upon it, and it may be cut with a pair of scissors. He considers it cheaper than glass, and he has sent me a sheet of it, which peels off into several sheets of thinner substance. I intend to try it myself in my next vinery, so fully am I satisfied of its advantages. I am, Sir, &c. — *G. G. Birmingham, May 16. 1829.*

Rules of Horticultural Societies. — Sir, Allow me again to suggest that advantages of some importance might be derived from a compilation, or rather an abstract of the rules of the numerous horticultural societies, the proceedings of which you publish. By making known the best regulations, and pointing out those which are defective, new institutions might be formed, which would promise more beneficial results than many now seem calculated to effect; the competition might be more fairly arranged by classing more accurately the individuals who compete; medals ought to be confined to the best productions, the treatment of which is detailed; market-gardeners should be excited to rivalry, and cottagers and manufacturers.

encouraged. Under the present arrangements of the horticultural societies, I conceive that the country derives but little benefit; whereas, under more judicious regulations, the improvements in horticulture might be so widely made known, that every class in society might derive advantage. — *W.* Aug. 26. 1829.

Standard Sizes for Garden Pots. — I beg to propose, through the medium of your useful periodical, the fixing of standard sizes for garden pots throughout England, the various appellations of which, in different districts are productive of much misunderstanding. The gradation of sizes around London is, I believe, sixes, twelves, sixteens, twenty-fours, thirty-twos, forty-eights, large sixties, small sixties, and thumbs. Some judicious arrangement of size and nomenclature, though apparently trifling, would be preventive of much mistake; for as your Magazine now reaches every part of Britain, it is, I conceive, the only proper vehicle that can generalise sufficiently the proposed arrangements amongst the particular classes it most interests. If you think the matter worth notice, I would advise your consulting some respectable London nurseryman, who would of course be a fit person to affix the standard. I remain, Sir, &c. — *Robert Errington. Oulton Park, Cheshire, Nov. 28. 1828.*

Ænothëra decumbens. — Sir, In the *Botanical Register* I find it observed of the *Ænothëra decumbens* (p. 1221.), "If cultivated in a large garden-pot and in poor soil, so that their over-luxuriance is checked, both this and all its purple-flowered brethren produce their blossoms in greater perfection than in the open border; but they cease flowering sooner." It has occurred to me that all the advantage proposed by the above method of treatment might be gained, without the attendant disadvantage, by substituting a common wicker or other basket in the place of the garden pot: this would serve to confine the roots, and so check the tendency to over-luxuriance, while the plant would derive all the benefit of the open ground with regard to the supply of nourishment, together with equable temperature and moisture. The common sale baskets used in fruiterers' shops for cherries, plums, &c., would answer the above purpose perhaps as well as any. It is scarcely necessary to say that this hint may be improved and applied pretty extensively in the treatment of many perennial herbaceous plants, whose luxuriant habit, or troublesome protrusion of creeping roots, renders some restraint upon their growth desirable. — *Suburbanus. Nov. 14. 1829.*

Assafœtida. — Sir, It is one of the very useful objects of the present day to introduce new vegetables. In the *Travels of Captain Pottinger in Beloochistan and Sind*, I remember he speaks highly of the Assafœtida plant, as a vegetable which is eaten stewed, having the appearance of a cauliflower, and held in very high esteem, so much so as to cause quite a scramble in the market, when brought down from the mountains. One cannot fancy any thing very good to be made out of any thing bearing an alliance to the Assafœtida of our Pharmacopœias; but from Captain Pottinger's account it would seem otherwise. I have not the book to refer to, but I perfectly recollect it contains something to the effect I have stated. I have no doubt the Horticultural Society will send out a mission to Persia to perfect their knowledge of this esculent, and I shall be glad if they get their first hint from your very amusing and useful publication. — *A. B. Regent's Park, 1825.*

ART. VII. Retrospective Criticism.

HORTICULTURAL Societies. — Sir, Amongst the valuable and interesting accounts published in your Magazine, those of the shows of the Provincial Horticultural Societies are not the least entertaining to some of your readers on this side of the water. With the fundamental principles upon which these societies are formed we are not so well acquainted; but by the liberal awards of premiums which are assigned to the most successful cultivators, it appears that a spirit of competition forms one of their most prominent features.

I have often regretted that the merits of this mode of promoting horti-

cultural improvements have never, so far as I have seen, been explained in any of your publications. As it is one that can be adopted by any society without incurring expense of any consequence except the procuring of articles for prizes, unless there are some extraordinary benefits to be derived by the formation of experimental gardens, which must be attended with considerable expense, I think it would be well to encourage an increase of the merely competing, reading, and publishing kinds; and, as far as possible, to let their comparative merits be published to the world: for in the present views of mankind it appears that the formation of a horticultural garden is considered as an indispensable accompaniment to render the labours of a horticultural society of any importance. Hence the great discouragement to the exertions of those who cannot afford the means of maintaining a horticultural garden, who, I am persuaded, were they aware of the meed of praise that well conducted societies independent of the accompaniment of such an appendage deserve, their diligence would not only be doubled, but the addition of new societies would be increased in a great degree.

Perhaps I may be mistaken in the estimate which I have formed of the value of the labours of horticultural societies, independent of their being accompanied by the establishment of a society's garden; if I am, my mistakes could no where be more ably corrected than in your Magazine, nor is there any work from which I would count it a greater honour to receive instruction. My sentiments are therefore offered with the greatest freedom; and, in order to come to the point at once, I totally disavow the idea of a horticultural society's garden being an indispensable or even an essential establishment in order to render their labours successful in promoting horticultural improvements.

The maintenance of an honourable spirit of competition, a free promulgation of every mode of culture attended with particular success, an extensive circulation amongst the members of interesting periodical publications on horticulture, with the introduction and distribution of new or superior articles, I consider to be the fundamental and essential grounds for promoting the successful labours of horticultural societies. And as these are means which it is in the power of any association to employ, although only possessed of the most moderate funds, I think it would be doing an essential service to the advancement of horticulture to exhibit to the world (or, what is the same thing, in your Gardener's Magazine) as correct an estimate as possible of the real value of such associations, which, without intending to detract from the superior merits of those more opulent institutions which support also experimental gardens, might, I think, be shown to be capable of producing very great improvements in the art and science of horticulture.

The correctness of the above sentiments I think have been verified in a great degree by the labours of the New York Horticultural Society, which was commenced about eleven years ago. Previously to this period it was observed by a number of experienced horticulturists, that a great proportion of the garden products raised for the supply of our markets were of an inferior quality to what the natural soil and climate were capable of producing. It is true there were some gardeners who had long before been in the habit of raising superior articles, some of whom appeared to consider it bad policy to adopt any measures calculated to advance a general improvement, while others were of a different opinion, considering that because of the great quantities of inferior produce which could always be bought at a lower price, the more careful cultivators seldom realised an adequate additional price to remunerate them for their extra-pains. At any rate they valued the idea of being publicly instrumental in promoting the improvement of a useful and interesting art as paramount to every other consideration. Premiums were soon offered by the Society for the best

specimens of all the most interesting garden products raised by its members in the vicinity. These members have cultivated from five to ten and twenty acres, to an amount of more than one hundred acres of ground, whose produce has been regularly sent to our public markets. That the maintenance of such a system of emulation as this, for eleven years, could not but materially improve the state of our garden products must appear evident to every one the least acquainted with the nature of horticulture. Yet this, although it is the most evident feature in the beneficial effects of our Society, is perhaps not the most valuable. Those pretended hidden secrets in the art are stripped of their mysterious covering: a more general knowledge of what the soil is capable of producing is diffused amongst the cultivators; a taste for reading various valuable productions upon horticultural subjects has increased; the aggregate of our accumulating horticultural knowledge is no longer confined to circumscribed limits; the account of every new or valuable improvement is published in the reports of the inspecting or visiting committees; and, in short, the New York Horticultural Society has formed a new and most important era in American gardening.

The above are a few of the beneficial consequences of our New York Horticultural Society's labours (without their having established an experimental garden), founded and prosecuted solely upon such principles as I have above described. How far you may think me correct in the great value which I attach to this mode of procedure for Horticultural Societies generally, particularly for those in comparatively a new country, or whether the publishing an account of them in your Magazine, or the views above expressed, might be considered calculated to entertain any of your readers, I know not; such as they are, they are at your service. Yours, &c.—
William Wilson. New York, March 1. 1830.

Remarks on Mr. Johnson's Doctrines concerning the Diseases of Plants.—Mr. Johnson having extended his instructive and interesting course of Horticultural Chemistry in your Magazine to the diseases of plants, I beg leave to trouble you in addition with the result of some observations I have made on the subject, conceiving it to be one of such importance that no system of treatment should be recommended that is not grounded on actual experience and matter of fact. In his consideration of the diseases of plants, Mr. Johnson seems to me to express doctrines apparently at variance with each other, which, as I cannot reconcile, and may perhaps misapprehend, I shall quote literally. Speaking of them in a general point of view, he says, "Such morbid affections are not, however, always the consequences of old age, they are often caused by matters being absorbed from the soil, which are inimical to the constitution of the plant, from a want of those that are beneficial, as well as from their excess; from violent and sudden transition of temperature; from wounds, and from the attacks of vermin:" but in a subsequent passage, specifying ulcer, canker, and gum, in the genera *Ulmus*, *Quercus*, *Pyrus*, and *Prunus*, he says, "*In every instance* I am prepared to maintain that the disease is local, that is, it at first arises from a disarrangement in the functions of the affected part, and is *never brought on from a general diseased state of the tree*, but is occasioned by contingencies perfectly independent of soil or situation; when the disease has commenced, if these are unfavourable they may aggravate the symptoms, and promote their diffusion, but they are not the originators of the disease." With Mr. Johnson, in his general assertion, I perfectly agree; but from his subsequent opinion, perhaps meant as an exception, I beg leave to dissent, and submit to him some instances, out of many, to the contrary: indeed they are so numerous, that they must be familiar to most observant horticulturists, under various circumstances.

In a piece of ground which I had newly taken (and formerly possessed), I planted an orchard with apple, pear, plum, and cherry trees, and peach

trees against its walls, all in a healthy state; they grew rapidly and luxuriantly, but, after some time, I found that, though uninjured by any accident, their shoots gummed and cankered, and that a great proportion of the growth they made in summer died down the season following, though the soil was good kitchen-garden ground, full two spades deep; dry, on a dry substratum, and in a situation sufficiently airy; but the subsoil was a ferruginous clay, and the upper stratum partook of its nature: here this general cause brought a general diseased state of the trees, which I found incurable; but where I removed the upper soil, and replaced it by fresh sweet earth from another quarter, after rendering the subsoil impervious to the roots of trees by a layer of stones and rubble, the new-planted trees which I substituted grew perfectly clean and healthy from thenceforward. It is also notorious, that buds or grafts taken from trees diseased as these were preserve a taint which sooner or later breaks out, being, as in the analogous case of scrofula in the human frame, constitutional. Old garden ground, saturated with carbonaceous matter, rarely grows healthy fruit trees, particularly peach trees. To general causes must these general effects be attributed; and to those enumerated, along with the operation of raw cold seasons, are these diseases generally owing, and I have ever found them incurable when produced by such, though the health of the tree may be improved by judicious treatment. On the contrary, I have never known local injuries by wounds or bruises, if partial, affect the general health of the tree; or prove fatal, except to the limbs on which they were inflicted, and that by extreme neglect; they operate only on the contiguous parts, not by the circulation of deteriorated sap through the general system.

Excision of the adjoining injured parts, and exclusion of air and moisture by some adhesive composition, I have found sufficient for the purpose. Sir Humphry Davy's recipe of neutralising the alkaline juices of the plant by acid potations, however chemically ingenious, would, I fear, prove worse than the disease, and kill before it could cure. The application of manures to the roots of gummy or cankered trees, is, in my opinion, injurious, as they are generally disposed to grow too luxuriantly without it; their habit is plethoric. I should prefer a contrary course; checking their growth by transplantation into wholesome maiden soil. There is a local disease, the mildew, which unless early arrested, will affect the general health of the peach tree, but only by the spreading of the infection externally; and as some of your correspondents have made enquiries respecting its cure, it may not be unacceptable to them to learn that I have always found the use of sulphur an effectual remedy, if early and perseveringly applied, mixed up with water, or soap suds which are more adhesive; it should be dashed heavily over the tree by a syringe, particularly on the extremities of the young shoots, which should be kept closely laid in; and, being of opinion that the mildew is a parasitic plant which disperses its seeds widely, I would recommend, by way of prevention, that such peach trees as are in the neighbourhood should also be syringed, though those only which have leaves unfurnished with glands are liable to be infected by the mildew. Yours, &c. — *John Robertson. Kilkenny, Feb. 20. 1830.*

The Epsom Nursery. — I have been a reader and admirer of your Gardener's Magazine from its commencement, and have felt a high degree of satisfaction at its success and wide circulation. Admitting that it is your privilege, as Conductor, to introduce what matter you think proper into its pages, it remains optional with gardeners and the public whether they will purchase your books (Numbers) or not. But there is one circumstance in which periodicals differ from other books. If the subject of another book is not to my taste I need not buy it; but if I am a regular subscriber for your Magazine (No. XXIV. for instance), I take it on the belief that nothing will be foisted into it to supersede interesting and valuable matter, generally

acceptable, for the sordid purpose of puffing, with the more sordid view of promoting individual interest ; this latter I call little short of a fraud upon your subscribers. Of what other character, I would ask, is the no less than four pages in No. XXIV., under the head of " London Nurseries," devoted to plants that have flowered in the *Epsom* nursery ? However scientifically the descriptions are given, I do not hesitate to pronounce it as arrant a puff as ever was sent forth by the poet laureate of " No. 30. Strand," on behalf of Warren's jet, or Hunt's matchless. Had it been a report of *your own* visit to the nursery in question, it would have been quite another matter ; but articles got up as the one alluded to have no more business to be incorporated in the body of the Magazine than " Day and Martin " or " Anderson's Pills." If Messrs. Young choose to employ a puffer, let him take his appropriate place in your advertising sheet, as many of his betters do, and let the publishers be paid for the insertion. And these same Messrs. Young, too, have apprised " Alpha " (is he the puff-maker ?) that they desire to open a correspondence with all the world !!! " Bless me, how we pippins swim !!" and " by exchange or otherwise." What an immense benefit to the whole world !! and what a privation has that same world suffered by such correspondence having been delayed, so preposterously delayed, till 1830 ! Just be so good as ask this same Mr. Alpha whether Messrs. Young also informed him how far patriotism and a pure love of science predominate in their minds over the love of pounds, shillings, and pence. The discrepancy must be immense. And, again, what is the *rate* of exchange between Epsom nursery and — where ? The Jardin des Plantes at the Swan River ; or the botanical establishments in the dominions of Don Francisco in Patagonia ? or the territories of the Cham of Tartary or the Great Mogul. Information on these subjects would be very desirable ; and, by way of help, let Alpha ascertain and publish, for the information of the " whole world," what the *rate* of exchange is *now* between Epsom nursery and a certain establishment belonging to an amateur (a particular friend of mine) not quite a hundred miles from Corstorphine, North Britain. To conclude, Mr. Conductor, let us have no more puffs unless confined to the advertising sheet, or you will lose the good opinion of many good friends as well as that of your very obedient servant, — *Aristides*. London, February 1. 1830.

We have inserted this letter, word for word, as received, in the hopes that the writer, whoever he may be, may feel ashamed at having put it together. The notices of the rare plants which have flowered in the Epsom nursery are no more puffs than the notices of the rare plants that are figured in the botanical periodicals ; both we believe to be highly acceptable to our botanical readers ; if they are not, let them speak out. If nurserymen disapprove of such lists as those of Alpha, let them also speak out, we shall then know what to do ; but it is not such a letter as that of Aristides that will move us either one way or the other. — *Cond.*

Mr. Capper's Papers on the Vine. — Sir, I am much obliged to you for the copies of Mr. Capper's papers on the vine, which you have been so obliging as to send me. I congratulate the readers of your Magazine most sincerely upon the publication of these papers, which appear to be the result of much patient and ingenious research. The tests spoken of by Mr. Capper in his first communication are particularly useful. I hope he will, however, forgive me for suggesting to him the propriety of reconsidering the drawing and description of the vessel he has given at fig. 27. Yours truly, — *John Lindley*. Acton Green, April 16. 1830.

Dove's Dung in Samaria ; in reply to A. G. p. 216. — You, the late Sir J. E. Smith, and A. G., are quite wrong. Miss Kent has shown (*Mag. Nat. Hist.*, vol. iii. p. 55.) that by Dove's Dung is meant the *Ornithogalum umbellatum*, the roots of which resemble that excrement. — *J. P. S.* April 3.

Watering Oranges and Camellias. (Vol. V. p. 732.) — Mr. Haythorn informs us that we have mistaken him : he did not mean to recommend the mode of watering cucumbers to be tried with camellias ; but the movable glass coverings which he described (Vol. V. p. 480.) to be tried with camellias, oranges, and other plants. — *Cond.*

Building Cottages on Sundays. — In one of the essays on cottage affairs there is a passage which I cannot help thinking highly objectionable ; viz. (p. 166.) “ Labourers who so occupy themselves ought to have a magistrate’s permission to do so [i. e. to build their houses] on Sundays for a certain period.” I do not see how the *magistrate* can grant a dispensation for profaning the Lord’s day, except so far as the said profanation is a mere offence against the state and the law of the land ; if he can, he is as fine a fellow as the pope himself. If ever there was an institution calculated more than any other for the especial benefit of the poor, it is that of the Sabbath, in which they, who of necessity must labour six days, are not only allowed but commanded to rest on the seventh. In a *temporal* point of view the Sabbath confers a much greater blessing on the lower orders than it does on the high and middling ones ; and therefore it very ill becomes *them*, of all persons, to set an example which would tend to annihilate the institution altogether. But I forbear, or I shall be writing a sermon. — *B. Coventry, April, 1830.*

We intended limiting the Sunday labours of the cottager entirely to the building of his cottage ; but perhaps we were wrong in suggesting the idea of working on Sundays under any circumstances whatever, on the general principle that every mode by which more hours of labour can be extracted from a labourer has a tendency to increase his pains and diminish his pleasures, and the contrary modes the contrary effects. We would rather have two Sabbaths in the week than one ; and we hope the time will come when all labourers will be allowed two hours for breakfast and three for dinner, or when they will work chiefly by the job. — *Cond.*

Chemical and Geological Elections of Plants ; in reply to Causidicus, p. 216. — Dear Sir, Your learned correspondent Causidicus has, in the last Number of the Gardener’s Magazine, alluded to my communication on the United States of America, and very justly makes some pointed observations on the deficiency of information therein conveyed respecting the habitats, &c., of the plants enumerated, and the inconclusive characters made use of to indicate the various soils, situations, altitudes, &c. In the latter respect I am, or ought to be, completely exonerated from blame, *as they are solely and wholly your own.* You have a most undoubted right to abridge any communication and discard all irrelevant matter, but this ought to be done with due attention, that the substance may be correctly given. How far this was adhered to I leave yourself to determine, as I herewith send you a verbatim copy of the original list, with the abbreviations you have used prefixed to each species, when in actual error.

A very superficial glance must convince you what a string of fallacious absurdities you have sent forth to the world under my name. That you did so most unintentionally there can be no question ; and further, I am certain had I sent you information of the same, there would have been nothing more required to insure its correction : but the truth is, I never perused the list in the Magazine with the view of comparing it with the MS. until the 2d instant, when my attention was directed to the subject on perusing the communication of Causidicus. I trust, however, although at the eleventh hour, you will do me that justice which I require ; and if you do not publish the list entire *with my remarks*, publish the corrections rendered necessary from the inattention in abridging.

In answer to Causidicus, I beg leave to state, I think he has given my communication a degree of merit to which I do not consider it entitled. As respects the list of plants I never intended it to assume a more prominent

part than as a supplement to the interesting communication of Mr. Goldie, on the same subject, published in Vol. II. p. 125., and I endeavoured to follow the plan he had adopted as far as possible in my remarks and descriptions; but the mutilated manner in which you sent it to the world made it assume a very different feature, and rendered it (even if correct) meagre in the extreme.

I trust the following hints and brief descriptions will afford more definite data in guiding Causidicus to a more accurate idea regarding the soils and situations, &c., of the trees and shrubs in the list; and I am truly sorry I am not chemist sufficient to give him a true analysis of the various soils. I regret this more particularly, from the importance he attaches to that point. Those soils which I have denominated

Light moist soils are generally composed of sand, finely divided clay, and vegetable matter, and are peculiarly adapted for absorbing the moisture from the atmosphere.

Damp rich swamps are a combination of clay, argillaceous sands, and alluvial deposits, the basis of which was sometimes argillaceous, siliceous, and vegetable matter.

River swamps are such as have been formed by inundations, and consequently are a compound of various soils.

Cold damp soils consist of a tenacious clay, with little or no vegetable matter in its composition.

On the margin of stagnant waters. The soil various, but in a medium state between marshy ground and hills, as respects moisture, and widely different in that respect from those found on

The margin of rivers. By this term I never intended to convey an idea that they grew in alluvial soils, as you have indicated; I invariably found them on dry spots, which are peculiar to the banks of most rivers.

Near to running creeks (rivulets). Similar to the preceding.

On sandy pine barrens. Those plants were generally isolated, the surface of the ground being only partially covered with vegetable matter; but the lofty pines frequently formed a dense mass, consequently the plants may be considered as growing in the shade.

If these brief remarks are of any use, they are very much at the service of Causidicus, or any of your readers. It will at all times afford me the greatest possible satisfaction to convey any information I may be possessed of, although I am well aware I have very little knowledge to impart to others, my stock being by no means sufficient for home consumption; and for that reason I appear in the pages of the Gardener's Magazine with the same view and from the same motives which induced Aristippus to visit the court of Dionysius, namely, "To give what I have, and to receive what I have not." I shall now subjoin the original list, and trusting you will give it, or, at all events, the necessary corrections, an early insertion, I remain, Sir, &c.—*Alexander Gordon. Lowesby Hall, near Leicester, April 16. 1830.*

Original List, with remarks.

Your abbreviations, where wrong.	<i>Acer rubrum.</i>	In damp rich swamps.
	<i>dasycarpum.</i>	In river swamps.
	<i>saccharinum.</i>	In cold damp soils generally.
	<i>nigrum.</i>	On high grounds in moderately rich soils.
	<i>Negundo.</i>	Very common along the margin of rivers in rich dry soils.
Alluv. s.	<i>Æsculus Pavia.</i>	} In a rich loam of a loose texture, under the shade of oak and other trees.
Var. s.	<i>discolor.</i>	
Var. s.	<i>flava.</i>	
Alluv. s.	<i>macrostachya.</i>	Margin of creeks in the upper districts of Georgia.

- Andrómèda angustifolia.* In open swamps.
nítida. In spring branches.
- Marshy s. *axillàris.* }
Marshy s. *acuminàta.* } On the margin of swamps.
Marshy s. *floribúnda.* }
- rígida.* }
ferrugínea. } In sandy pine barrens.
- Hills *frondòsa.* In damp cold soils.
Hills *arbòrea.* In swamps.
Hills *racemòsa.* On the margin of stagnant waters.
- Alluv. s. *Azàlea calendulàcea.* Near to running creeks in dry rich sandy soils.
viscòsa.
nudiflòra.
canéscens
bícolor.
póntica.
- Bignónia capreolàta.* In rich dry soils.
radicans. Damp rich soils.
- Alluv. s. *Calycánthus flóridus.* In light fertile soils, near the margin of rivulets.
- Alluv. s. *Catálpa syringifòlia.* Along the banks of rivers, in rich dry soils.
Cércis canadénsis. In moderately rich soils, on elevated grounds ; also in swamps and marshes.
- Var. s. *Cratægus virgínica.* }
Var. s. *coccínea.* } In soils moderately rich, but invariably dry.
- Cupréssus dísticha.* }
thyòides. } In stiff soils generally, but I have found them in soils of a very opposite nature, and in various altitudes.
- Gelsèmium sempervirens.* This most beautiful plant flourishes in the greatest abundance, in almost every soil and situation, in the states of South Carolina, Georgia, and Alabama ; but I uniformly found it to luxuriate best in moist rich soils. In viewing this most superb creeper I experienced the highest gratification. Where local circumstances were favourable for the extension of its vines, the display was truly grand. Its rich foliage, beautiful flowers, and delightful fragrance, no pen can describe. The senses alone can appreciate its riches.
- Gordónia Lasiánthus.* This tree grows freely in the lands where springs prevail. I saw it in great perfection near Fort Bainbridge. In the Creek Indian nation (state of Alabama) some of the trees were 60 and 70 ft. high. The soil was very rich, and of a particularly loose texture.
- Alluv. s. *Halèsia tetráptera.* }
Alluv. s. *díptera.* } On the banks of running streams.
- Alluv. s. *Hydránga vulgaris.* }
Alluv. s. *quercifòlia.* } On the declivity of rising grounds in moderately rich soils, but invariably under the shade of other trees.
- Alluv. s. *Illicium floridànum.* }
Alluv. s. *parviflòrum.* } In dry, rich, light soils, near the southern extremity of Georgia.
- Alluv. s. *Kálmia latifòlia.* }
Alluv. s. *angustifòlia.* } On the banks of creeks, in light rich soils.
- hirsùta.* In wet soils, generally sand and vegetable matter.
- Laúrus Sássafras.* In various soils and situations.
- Alluv. s. *Liriodéndron Tulipífera.* This tree is among the highest in the southern states. I found it in Alabama 110 ft. high, but delighting in the most-fertile dry soils.

Alluv. s. *Lonicera sempervirens*. This beautiful plant grows very abundantly in rich, light, dry soils, on the banks of running streams.
Magnolia grandiflora. Of all the trees in the American forest, this superb tree, for beauty and magnificence, claims the superiority. What can be more beautiful than to see it 70 and 80 ft. high, with its regular pyramidal or semi-elliptical head, beautiful foliage, and flowers in such profusion. I do not consider it particular as to soil, having found it in the very richest and poorest, with their intermediate grades.

Magnolia glauca. In alluvial deposits of the richest quality.

Alluv. s. *acuminata*. This species prevails most in the mountainous districts, in a rich loam.

tripetala. Abundant in every part of the southern states through which I passed, soil similar to *grandiflora*.

Hills (!) *macrophylla*. I did not meet with.

Hills (!!) *cordata*. Also escaped my observation; but I understood it abounds in some parts of Georgia and Alabama.

Olea americana. This beautiful tree grows in rich light soils, within fifty miles of the sea coast in the state of Georgia. I thought I had found it on the banks of the Chatahootchie, 300 miles from the coast, but Dr. Wray assured me it never had been found there; and the probability is I was mistaken, as it was not at the time in flower.

Alluv. s. *Prunus caroliniana*. Margin of rivers, in rich light soils.

virginica. Very rich soils.

hirsuta. Moderately rich soils. } In low grounds.

Alluv. s. *umbellata*. Dry sandy soils.

Alluv. s. *chicasa*. In dry cultivated lands.

Hills *Quercus Phellos*. Generally in swamps.

cinerea. On sandy barren grounds.

virens. Along the coast, in rich soils.

These three species are very different in their site and soil. The remaining species of this genus that I met with generally thrive best in rich soils. So tenacious are they of good land, that the settler regards them as the best criterion (except the vine) to direct his judgment respecting the fertility or sterility of the soil.

Alluv. s. *Rhododendron maximum*. On the margin of mountain streams.

punctatum. Margin of stagnant waters.

catawbiense. Only on the summit of the highest mountains.

Rubus villosus. In damp soils.

cuneifolius. Light dry soils.

occidentalis. In rocky soils.

trivialis. In soils, wet, dry, rich, and poor.

Ulmus americana. In rich soils, near to swamps or marshy ground.

fulva. In rich fertile soils.

alata. In rich soils, on the margin of swamps.

Vaccinium Myrsinitis. In sandy soils.

arborescens.

stamineum. } In fertile dry situations.

dumosum.

frondosum. } In soils of a stiff close texture.

galzans.

corymbosum. } In swamps.

fuscatum.

tenellum. In a dry gravelly soil.

- Vitis rotundifolia*. In light rich soils.
ripària. The same.
 Alluv. s. *æstivàlis*. A vine, climbing the loftiest trees of the American forest, and reaching their very summit; in very rich lands, generally a free friable loam.
 Alluv. s. *cordifolia*. In rich light soils, but generally on the banks of rivers.
Labrusca. In the very richest soils, in deep river swamps.
Yucca gloriòsa. In light sandy soils.
filamentosa. In poor pine lands.

The abridgement of the above communication was published in December, 1828, while we were in Germany, and we cannot now ascertain whether we abridged it ourselves, or committed it to another for that purpose. We regret that it has been so imperfectly done, and take this earliest opportunity of remedying the evil. Whatever errors we commit we are at all times ready to correct, and never feel more obliged, either to friends or enemies, than when they point them out. — *Cond.*

The Pots in which Mr. Knight grows his Pines. — I beg to ask Mr. Pearson, what kind of pot Mr. Knight uses for his pines? (Vol. V. p. 718.) When I visited Downton Castle, eight or nine years ago, I found them growing in pots about 13 in. deep, by 17 in. diameter at the top; the plants, strong and healthy, as I expected to find them, and I am surprised Mr. Pearson did not expect to find them so too, after all the noise which he must have heard about them. The next time I visited Downton, little more than two years after, I found a very different kind of pot; a friend with me observed that they looked like chimney-pots. I think they must have been near 2 ft. deep, and about 1 ft. wide. The plants were very fine; but not in any way resembling the American aloe in habit. I am now curious to know what size and shaped pot the president has finally determined on. I was sorry to see the peach trees at Downton so much infested with the red spider, and the fruit dropping off before ripe on that account. This and other things plainly spoke the want of a gardener. The cherries were fine; but I have seen far better fruit of pines at Mawley Hall in Salop and other places, grown, at much less expense and trouble, on the regular heat of a tan bed. Mr. Boughton of Worcester never pretended to be a pine-grower; but Mr. Knight is like the rest of us, and has his hobby. — *W.* March 1830.

Treatment of the Peach Tree; in reply to Mr. Housman. — Sir, I perceive in the last Number of your Gardener's Magazine you have caused to be published an illiberal and a senseless letter, ridiculing my paper on the peach tree, which letter I consider to be no better than a mass of absurdity from end to end. I therefore call upon you to publish the following reflections in your forthcoming Number, that you may prevent inexperienced and presumptuous persons from making fools of themselves, and misleading the credulous. Mr. Housman is a very young gardener, he has had no experience in his profession, and is the last writer in the whole Magazine who could be prepared to say that any practice of mine could be right or wrong. What he has hitherto written shows that his opinion is not entitled to the least confidence. In his observations on my paper, he has betrayed the utmost ignorance of his profession, both practical and philosophical; and no man but himself could have so perverted my meaning, — that I meant to say that a tree growing as a standard in Malta bore any resemblance to another in England trained on a wall. I repeat what I before stated, that a shoot 1, 2, or 3 in. long was as capable of producing as large, if not larger, fruit, with much more certainty than another that extends as many feet; and I do boldly assert that fruit situated in proximity of exuberant wood is impoverished in its growth. So unfortunate has he been in attributing ruinous consequences to my practice, that I have now peach trees under

my care, that have yielded to my treatment, for half a lifetime, the best crops of fruit I ever saw. Modes of vegetable culture are not a matter of opinion like a political question; success will at once remove doubt and silence cavils. The best means, I believe, yet known to ripen the wood and mature the blossom buds for the future crop, in a short season of low temperature, is to repulse the growth of the shoot by cutting off its top towards the end of summer; and, unhappily for the horticultural sagacity of Mr. Housman, it is more applicable to the weak than the strong wood, because there is no danger of the former producing a second growth. So sensible are the French gardeners of the utility of this stopping, that they constantly practise it on their apple and pear trees. Who but the greatest novice would cast up longitudinal trenches on his peach borders, and expose the roots of his trees to the frost of winter, and dam up the water? I suppose we shall be told in some future letter, that his border is provided with a pitchment like that of Mr. Hiver, or that the wall is built on a mound, which passes off the water right and left with the greatest facility. What will Mr. M'Murtrie, who is perhaps the first of the first rank of pine-growers, think, when he hears it dogmatically asserted that the pine-apples he now cultivates so extensively are compared to a common codling apple, and a Swedish turnip? The truth is, Mr. M'Murtrie knows well, and so does every experienced gardener, that all the kinds of pine-apples are good when well grown, and bad only when badly managed; and I think he will concur with me in saying that Mr. Housman is a mere horticultural scribbler, but no gardener. If I mistake not, he may be ranked amongst that respectable class of human beings, who, if they were to live five hundred years, would never be able to conceive a new thought, nor invent a mousetrap. There has been lately so much said about the necessity of air to the roots of our fruit trees, that it is not improbable before long we shall see them mounted upon pillars, like the stacks of corn in a farmer's yard. Stirring the earth deeply to admit the ingress of air has the advantage of creating a profusion of suckers for budding and grafting; the truth of this, even those whom Mr. Housman calls "numskull" readers cannot have the audacity to deny. I invite the criticisms of the experienced intelligent gardener to my paper, but I will pay no future attention to any shallow or pretending critic, who has nothing but conceit and impudence to support him. If we are to rely implicitly on Nicol, Smith, &c., for what end was your Magazine intended? I am, &c. — *H. S. Newington, April 14. 1830.*

Mr. Hiver's Mode of training the Pear Tree. — Sir, Your correspondent Mr. Bernard Saunders, who has commented on my letter on the culture of the pear, must have read it with very little attention, otherwise he would have known the age, and the manner in which my trees were trained. Mr. Saunders has likewise totally misconstrued my meaning with reference to the thorn, in supposing that I meant to recommend leaving these trees to nature. I only wished to show the bad consequences resulting from the severe cutting of the tree confined to a limited space and rich border. So far is my practice from being hostile to handsome and well-formed trees, that I think I could show him as fine a collection of my training, as he or any other gardener ever saw, or could desire to see. It is surely as easy a matter to train branches uniform and straight, studded from end to end with blossom buds, as another naked as a sign post. But there may be many ready to condemn my system, who never have equalled my success; and no gardener can write for every reader. There will always be localities and various circumstances in which vegetable culture is placed, that no form of management, however general its application, would be found practicable. As I consider my letter of much importance to gardeners, I am not sorry to be thus induced to furnish such further particulars as have been connected with the progress of my trees. The kinds cultivated were the Brown Beurrée, Crassane, Autumn Bergamot, St. Germain, Colmar, and Chaumon-

telle. They were planted in February 1813, and had previously been two years trained in the nursery. The first year I cut them back from two thirds to one half their length; the next year they were shortened somewhat less, and in the third season very little. As they now had furnished wood sufficient to form a good fan-shaped tree, they never were afterwards shortened. To fill the wall effectually, as the trees advanced, shoots were laid in between the main branches, and the whole of the superfluous breast wood was constantly cut away within an eye or two of the stem, as it was created. Thus the whole surface of the tree was exposed during the summer to all the light and heat its situation was capable of affording; and this was all the pruning the plants appeared to require. The system of not cutting away the breast wood before the end of summer, I have always considered to be bad; because the redundancy of sap and shade are the chief agents in sterility. Vegetable physiologists are at variance; but it is a well known fact in the anatomy of plants, that every shoot in its embryo state contains the rudiments of a blossom, and that it requires only a certain modification of the vegetable fibre and the juices of the tree to convert it into blossom, and this conversion can only be produced by light and heat acting on the requisite degree of sap. I am confident that I could cause the most luxuriant sort of tree that Mr. Saunders has described to produce blossoms and fruit in a short time, by giving it a scanty supply of earth to its roots, leaving the wood the full length, and exhaling its redundant and watery juices by exposure to the light and heat.

Mr. Saunders attaches much consequence to the mode of winter pruning, but I do not. It is true that every plant has some habits peculiar to itself, but the whole are subject to the same general laws, and may, with very little variation, be pruned in a similar manner. To render an exuberant pear tree, planted in a rich border, fertile by any act of pruning, would just be synonymous with restoring health to a luxurious glutton, diseased with indigestion, by giving the best-prepared medicine, and suffering him at the same time to continue his over-feeding. To prune is merely to cut away superfluous wood, and a goat first taught mankind to do so; it has, in the winter season, little or no influence in the production of future blossom buds, for these we must look to the earth and atmosphere. Those who have read Mr. Harrison's complex and laboured definitions of the art, and seen the trees on the west and east walls in the Wortley garden, will readily admit the validity of these assertions. There are some persons who are great advocates for grafting the pear on quince and other feeble stocks, and Mr. Saunders appears to be a convert to this system; but to insert trees of such opposite constitutions as Mr. Saunders has mentioned on the same kind of stock would be exceedingly wrong. Surely, to manage these things by the border is more preferable, because it is so much under the control of the gardener. But, with regard to grafting the pear on different kinds of stocks, I have had considerable experience; and the best stock, in my estimation, to moderate the growth and induce early and permanent fruitfulness, is the Swan's Egg pear; for I never saw a pear tree of any age grafted on quince or other puny stocks, that did not exhibit those marks of disease consequent on poverty. Mr. Torborn, a gardener of great celebrity, at Ashridge Park, has published, in the *Transactions of the Horticultural Society*, a comparative estimate of pears grafted on their own and on quince stocks. But the trees at Ashridge on free stocks, like those at many other places, were too luxuriantly circumstanced to yield much fruit. From what I observed of Mr. Torborn's fruitful trees, they did not equal my own in the quantity or the excellence of the produce. I may here mention that the most formidable rival I ever had to encounter, in the cultivation of this fruit, was the old farmer whose tree I noticed in my preceding paper: he took much delight in his garden, though he knew no more of vegetable physiology than a child, and all the assistance the tree ever received from his hands was, I believe, to fasten

any loose branches in spring, and in autumn to gather the crop; yet he invariably enjoyed success.

It would, as Mr. Saunders observes, be very desirable to have this fruit more extensively cultivated. There ought to be in every orchard an equal number of pears and apples; and every cottager might plant on the walls of his house the best varieties now in cultivation. Mr. Saunders, or any other correspondent who could furnish lists of such kinds as are most suitable would, I am sure, confer an obligation on your readers. There are many of the new sorts of particular excellence; but there are also several others that have been cried up to fame, that are very unworthy of the praises that have been bestowed upon them. I shall not notice any future comments that may be made on my papers, but leave them wholly to the praise or contempt of posterity; and I hope your friends will confine their publications to useful truths, and not indulge in futile controversy. I am sorry to find *you* jarring with Mr. Knight about potatoes and pine-apples. Surely his papers possess great merit. Every gardener, in whatever way he may be cultivating the pine, must have derived instruction from Mr. Knight's observations; and I perfectly coincide with him in thinking that his paper on the potato is the most valuable the Society has hitherto published. What is alleged in favour of these criticisms is, that they elicit truth: but it cannot be denied that they also obstruct improvement; they prevent others from adopting new forms of management, and I hope all your correspondents will bear in mind, that no man has a right to condemn that mode of culture which he has not repeatedly put to the test of experiment. I shall conclude my letter by reminding Mr. Saunders that the first object gardeners ought to have in view is plenty of large and well flavoured fruit, and the next, handsome and well trained trees. I am, &c. — *Robert Hiver. February, 1830.*

Erratum. — In my paper on the natural succession of forest trees (Vol. V. p. 421.), for "General Wayre," read "General Wayne." — *J. M. Philadelphia, Jan. 13. 1830.*

Erratum. (p. 231.) — For "Bell Poole or Powe," read "Bell Poole, or Pome." — *T. B. April, 1830.*

Names and the Introduction of several Sorts of Field Cabbages. — Sir, I wish that your correspondents would be a little more particular in the names of the articles they recommend for culture. I allude at present to the cow cabbage, or Cesarean kale, as mentioned in your last Number, p. 104. Whence came these names? About 1770, there was a variety of cabbage in cultivation here, called the Anjou Cabbage, which I take to be the same as that which is now called the Cow Cabbage. It was introduced from France, where it was cultivated by the Marquis of Turbilly, who gave instructions thereon. "It is a tall upright plant, from 6 to 8 ft. high, furnished with loose open leaves all the way up the stem. This plant may be raised from seed in August, and transplanted in March, on five-foot ridges, in single rows, 2 ft. apart in the rows, and these head as the Scotch Cabbages. This cabbage or colewort casts its summer leaves in November and December, and puts out new leaves afterwards. The best way of using the plant is to feed off the leaves with sheep before they decay, and they will eat off all the leaves clean to the height of above 4 ft. These tall plants are excellent shelter for sheep and lambs, which are very fond of the leaves, and they fatten well on them. The leaves that grow above the reach of the sheep are eaten greedily by horses, which eat all the upper leaves without damaging the stem; and when the first or summer leaves are all eaten off by the sheep and horses, then all cattle are shut out till new leaves are produced, and are fed as before. They continue to produce leaves all winter till May; they produce above 178 upon each plant, and near 20 tons per acre." A Cesarean kale was raised by the Rev. Bartholomew Dacre, at Knowsley, near Manchester, about 1819, and was much recommended in the *Farmer's Journal* at that time.

The *Thousand-headed Cabbage*, *Chou à Mille Têtes*, which you say has been recently introduced by Dr. Hamilton, was cultivated by a Mons. Leco- chere, at Widefield farm, Waplesdon, near Guildford, in 1808, to a consi- derable extent, who saved large quantities of the seed for sale ; but, meeting with little success, he abandoned it. He published a small tract on its merits. Many of the London seedsmen grow the seed now for sale, but as the demand is so very limited, it may be said to be almost out of request ; those who have tried it having found it not so valuable as the Drumhead, or Scotch Cabbage.

While on the subject of cabbages, let me observe that the Turnip Cab- bage, called also the Hastings Cabbage and Cape Cabbage, was first brought into notice in field culture by Mr. Wynne Baker, the intelligent secretary to the Dublin Agricultural Society, about 1734 ; and that the Turnip-rooted Cabbage was first introduced by John Reynolds, at Addis- ham, near Wingham, Kent, in 1763. See *Dossie's Mem. of Agriculture*, vol. i. p. 420., and *Trans. of Soc. of Arts*. The Kohl Rabi, a purple Hungarian turnip ; Red Turnip Cabbage, I find advertised for sale, at Grigg's Coffee House, Covent Garden, in 1774. — *M. H.*

ART. VIII. *Queries and Answers.*

COMPARATIVE Advantages of Smoke and Hot Water in heating Hot-houses.— Sir, I have for some time employed myself, preparatory to building a range of forcing-houses, in enquiring as to the comparative advantages of the old smoke flues, and the recently introduced system of hot-water pipes. The opinions of the most experienced horticulturists are so equally divided and opposed regarding these two methods of generating heat, that I feel quite perplexed which to adopt, and therefore take the liberty of addressing this letter to you, in hopes that, through the medium of your *Gardener's Magazine*, you will be kind enough to communicate either your own sentiments on this subject, or to request some of your numerous contributors will favour the public and myself with a comparison of the advantages and dis- advantages of both systems. I ought perhaps to mention the opinion given to me by one experienced gardener, who has been for some time working houses on both constructions, that hot water causes a decidedly more luxu- riant growth of wood and larger fruit, but that the flavour is always inferior to what is grown in houses on the old principle ; he believes the pipes are perfectly air-tight, but has never used a hydrometer, and, on that account, the accuracy of the comparison may perhaps be questionable. You will also, I think, be conferring a benefit on the public, by a paper respecting the application of hot water to the growth of melons, cucumbers, early pota- toes, &c., in pits, accompanied by a plan. In districts where coals are plentiful, the annual expense (independent of the first cost) would probably be considerably less than in the use of fermenting horse litter, and tend much to prevent the disagreements between the gardener and farmer, which in all establishments too frequently occur. I am, Sir, &c. — *R. H. R.* Feb. 24. 1830.

The result of what we see and hear is, that the mode of heating by hot water, whether in stoves, forcing-houses, green-houses, or hot walls, is decidedly preferable to steam or smoke flues, or any other mode hitherto in use. For hot-beds we do not say that hot water is superior to dung, but we think it at all events equal to that material. — *Cond.*

Mr. Hay's System of heating Pits.— Sir, I wish you would state your opinion on this subject, giving an estimate of the expense of say two pits, one in front of the other, each 27 ft. 8 in. long, admitting a steam chamber at the end 10 ft. 6 in. broad, and giving 6 ft. 6 in. in for the bed ; the upper one for

pines, and the lower one for melons, with the roofs all of the same slope. Yours, &c. — *A Constant Reader*.

Our opinion of the plan is highly favourable; as to the expense, our correspondent had better employ Mr. Hay, or some professional man; at all events, we do not feel ourselves called upon to engage in such a task. — *Cond.*

Gram. — Sir, In reply to G. (p. 224.), I beg to state that I have cultivated gram in a warm border, and that its scientific name is *Cicer arietinum*, or Chick Pea; the seeds resemble a ram's head (*arietinum*), and the flowers are generally pink, but sometimes white. Your constant reader, — *N. S. Hodson. Botanic Garden, Bury St. Edmund's, April 20. 1830.*

The Athenian Poplar (*Pópulus græca*). (Vol. III. p. 410.) — At Bury, and in the plantations of Orbell Ray Oakes, Esq., at Nowton, near that town, are specimens of this species of poplar, but all female. Is the male in England? — *J. D. Feb. 1830.*

The Weeping Willow (*Sàlix babylónica*) blooms abundantly every spring in England, and even specimens of but few years' growth. I have examined many, and found them all female. Does the male exist in England? Mr. C. A. Fischer, inspector of the university botanic garden, Gottingen, says, "*Sàlix babylónica, male*, has often been sent to me, but *never the true*." Has it ever yet been brought from the banks of the Euphrates? — *Id.*

The King Charles, or Pocket Melon, — Is this melon the same as the Portugal Dormer? — *A Constant Reader. Feb. 1830.*

Butter made from the Milk of a Cow fed with Turnips has always a very bitter disagreeable taste, not worth by 2d. or 3d. per pound so much as from any other feeding. I am sorry to say I have some of it to my tea this afternoon. — *W. P. Vaughan. April 18. 1830.*

This taste, it is well known, may be prevented by pouring boiling-hot water into the churn before churning; and we notice this circumstance to enquire of any correspondent the proportion of water to the milk, and the rationale of its action. — *Cond.*

Hardy Bulbous Plants. — Sir, As I am writing an account of all the hardy bulbous plants now alive in Great Britain, and as many of those which our forefathers fostered so carefully appear to be missing in our metropolitan district, perhaps some of your provincial readers can inform me whether any of the following, so faithfully described in Parkinson's *Paradísus Terréstris*, yet exist in any of their gardens. I remain yours, &c. — *A. H. Haworth. Chelsea, May, 1830.*

The pure yellow Fritillary, p. 43.

Narcíssus ómnium, máx. fl. et cálice flàvo, p. 58.

Lady Mattness's Daffodill, p. 69.

The early Daffodill of Trebizond, p. 744.

Narcíssus alb. apophýsibus, tab. 71. 5. oblongocályce, tab. 71. 7.

Any of those on p. 73., or any Autumnal Narcissus.

Narcíssus pérsicus, tab. 75. 5.

The three Daffodills of p. 87.

Narcíssus mínimus, p. 88.

The six-cornered Daffodill, p. 102.

The clipt-trunk Daffodill, tab. 107. 1.

Hyacínthus moschàt. alb. and rubr., p. 112.

botryòides ramòsus, p. 114.

fl. álbo-rubénte, p. 115.

Hyacínthus comòsus álbus, p. 115.

comòsus ramòsus, tab. 117. 4.

stellàris præcox, white and blush, p. 127.

stellàris bizantínus, three sorts, p. 128.

líliifolius et rádice, p. 130.

Ornithógalum pannónicum álbum, tab. 137. 4.

hispánicum mínus, tab. 137. 6.

Asphódelus bulbòsus Galèni, t. 137. 5.

Cólchicum harmodáctylum, t. 155. 6.

The Cloth of Silver Crocus, p. 167.

The silver-coloured Autumn Crocus, tab. 169. 3.

The Spanish Nut (*Iris*), tab. 169. 6.

The Italian Corn Flag, tab. 191. 2.

ART. IX. *Horticultural Society and Garden.*

APRIL 6.—A good deal of discussion took place respecting the propriety of electing Mr. Sabine's friend and defender, the Earl of Caernarvon, a member of the Council; but notwithstanding the considerable opposition made to this measure, His Lordship was eventually elected.

Exhibited. Melocactus, from Mr. Thomas Russell of Worthing. Cera-
tochilus insignis, from William Cattley, Esq. F.H.S. Camellias grown in
the open air, from Sir Thomas Dyke Acland, Bart. F.H.S. Small-mesh
netting, at 6d. per square yard, 4 and 5 yards wide; common netting, 2 yards
wide, 3l. 3s. per cwt., or 2d. per square yard; and bunting, at 6d. per square
yard; from Mr. Benjamin Edgington. Seedling Pine-apple, from John
Entwistle, Esq. F.H.S.

Also, from the Garden of the Society. Forty-five sorts of Apples, five
sorts of Pears, and Keen's Seedling Strawberry.

April 20.—*Read.* On Heating Houses with hot Water; by Mr. George
Knowles. On an Improvement in the Mode of raising annual Seeds; by
Mr. Joseph Harrison. An Account of three Plants producing the officinal
Jalap; by M. Juan de Orbezoro.

Exhibited. Three sorts of seedling Apples, from Sir Thomas Dyke,
Bart., viz.: from the Nonpareil, from the Newtown Pippin, and from the
Kingsland Pippin.

Also, from the Garden of the Society. Thirty-seven sorts of Apples; four
sorts of Pears; and thirteen sorts of Flowers, viz. *Ribes aureum serotinum*,
præcox, and *tenuiflorum*; double-flowering Almond and Cherry; Merisier à
fleurs doubles; double-flowering Furze; *Rosa Banksiæ*, white and yellow;
early Tulips; Fritillarias; *Ribes multiflorum*.

May 1.—Some stormy discussion respecting a letter of resignation which
Mr. Malcolm, the nurseryman, had sent to Mr. Barnard, the *pro tempore*
honorary secretary. The object was to get the letter read, which, how-
ever, was not done. The officers for the ensuing year were balloted for,
and are as under:—President, T. A. Knight, Esq.; Treasurer, Alexander
Seton, Esq.; Secretary, George Bentham, Esq.; Assistant Secretary, John
Lindley, Esq.

The following printed paper was read:—

“The Council of the Horticultural Society, on the occasion of the pre-
sent Anniversary, have to submit, for the information of the Fellows, a state-
ment upon the following points, viz.:—Respecting the measures which
have been already carried into effect pursuant to the recommendations of
the late Committee of Enquiry; and respecting the arrangements which are
in progress towards additional alterations.

“Under the first of these heads, the Council have the satisfaction of
stating,—

“1st, That, after a minute investigation of the business, both at Regent
Street and at the garden, means have been taken to dispose of the arrears
of correspondence; and, on the 1st of June, to accomplish those reductions
of the establishment which were recommended by the Committee.

“2d, That the sale, on the terms already announced at the Meeting on
the 6th of April last, of a portion of the *Transactions* at present on hand
will, without interfering with the claims which the Fellows of the Society
may have upon the general stock, eventually place at the disposal of the
Council a sum of money to be applied towards the discharge of the debts
of the Society.

“3d, It is in future intended that the publication of the *Transactions*
shall take place as regularly as possible, and at a reduced expense; but it is
hoped that the plates will be prepared in a style not inferior to that in which

they have been hitherto furnished to the Fellows, and which has obtained general approbation, as is proved by an extensive circulation among the public.

“ 4th, It has been determined to sell by auction such duplicate drawings as it is not thought necessary to retain.

“ 5th, It has also been determined to sell by auction, in the month of July next, certain plants at the garden : a measure which, it is hoped, will relieve in part the charge of labour hitherto incurred, without in any degree diminishing, either with reference to science or general attraction, the collection of the more useful and ornamental plants.

“ 6th, The regulations for the admission of visitors to the garden have been altered as announced to the Meeting on the 20th of April ; so that all Fellows, whether subscribers to the garden or not, will in future have the power of issuing written orders of admission.

“ 7th, The house at Turnham Green was evacuated on the 5th of April last ; and although it is still on the hands of the Society, according to the terms of the lease, the Council are making every exertion to dispose of it as soon as a tenant can be found.

“ 8th, Those portions of the garden which are not at present required for the collections of the Society, have been planted with such crops as may be productive of a profitable return during the ensuing autumn ; the Council having considered that this was the only practicable mode of disposing to advantage of such parts of the ground ; and that, by this measure, combined with an alteration in the plan of selling vegetables and fruits, an increased income may confidently be anticipated.

“ 9th. Tickets, with the names of the plants, have been directed to be placed in the garden ; and it has become unnecessary for visitors to be accompanied, as heretofore, by the labourers in the different departments.

“ 10th, It has been ordered that the garden be open from nine in the morning till six in the evening in summer, and until sunset during the other months.

“ Under the second head of the proposed alterations the Council have to state, —

“ 1st, That they consider that the most essential is the complete revision of the by-laws. It has already been stated from the chair, at different Meetings, that this object had been long in contemplation, and that for this reason it had been thought inexpedient to reprint the original by-laws, which, it was admitted, were in many respects inapplicable to the present state of the Society. The Council are aware that the task is attended with difficulty, and that it is necessary to proceed with caution ; but they feel confident that every reasonable indulgence will be afforded them, in point of time, for attaining this desirable object, in order that a complete code may be submitted for the approval of the Fellows. A sub-committee has been appointed for this especial purpose.

“ 2d, It has been resolved to revise the existing rules of distributing plants from the garden, with a view to secure a more general distribution to all the Fellows of the Society, as far as is practicable, without interfering with the regulations respecting plants easily attainable through the hands of nurserymen.

“ 3d, It is proposed to let parts of the house in Regent Street, with the use of the meeting-room, to such societies or corporate bodies as may be willing to treat for the same, without interfering with the accommodations necessary for conducting the business of the Society, and so as to retain the library, in its present state, for the use of the Fellows.

“ 4th, It is intended, by a more satisfactory arrangement of the accounts, and by the preparation of a statement made up to the end of each month, to show, in a clear and distinct manner, the actual state of the affairs of the Society. This arrangement has only been deferred in consequence of the

delay in the appointment of a treasurer. It is further proposed, that a full account of the Society's debts and credits shall be printed with the report of the auditors at each Anniversary, and publicly read on that day.

"Without adverting to the causes of the proceedings and discussions which have of late unfortunately agitated the Society, the Council trust that a general interest in the common welfare will induce the Fellows to sacrifice all personal feelings, and to unite henceforward in one general object, viz. that of placing the Society upon such a solid and permanent basis, as will enable it to maintain the character which it has acquired as an Institution of national importance, having paramount claims to encouragement in the United Kingdom, and having already extended the benefits of its labours through every quarter of the globe."

May 4. — Read. An Account of an economical Method of obtaining early Crops of Potatoes; by T. A. Knight, Esq.

Exhibited. Sweeney Nonpareil Apples, from T. N. Parker, Esq. One hundred sorts of Apples, from Mr. Hugh Ronalds, F.H.S. Models of fruit of Apples, Pears, &c., by Mr. W. Tuson (these may be had of Mr. Thos. Goode, 15. Mill Street, Conduit Street). Several sorts of Tulips, from Mr. H. Groom.

Also, from the Garden of the Society. The following sorts of Apples :—Old Nonpareil (kept in pure sand), Sussex, Framboise, New England Sweeting, Skirm's Kernel, American French Crab, Keeping Red Streak, Nine Partners' Russet, Calville Rouge de Pentecôte, Norfolk Beaufin, and Bedfordshire Foundling. Also Flowers, as under :—*Valerianella congesta*; *Pyrus floribunda*, *pùbens*, *grandifolia*, *melanocarpa*, *prunifolia*, *arbutifolia*, *intermedia*, and *sorbifolia*; *Rosa Banksia luteo*; *Caltha palustris pleno*; double-flowering furze, double tulips, parrot tulips, show tulips; *Pæonia Moutan rosea*, *Banksia*, and *papaveracea*; *Æsculus glabra*; *Ribes aureum serotinum*; *Pæonia officinalis*, *albicans*.

Though the reformation which has taken place in this Society is considerable, it is by no means such as, we think, will eventually lead to the payment of its debts and its permanent establishment. We have no doubt, however, that it may linger on awhile, and we hope long enough to pay off all debts, and till Mr. Lindley meets with something as good, or better, than the vice-secretaryship. As to the public, whether the Society dies a year sooner or later is a matter of no sort of consequence. — *Cond.*

A correspondent writes as follows :— It is a curious anomaly in this the largest gardeners' club in the world, that no practical gardener has ever been admitted into the Council, no man who could prune the vine or grow a cucumber. Every other society in the world is desirous of embodying knowledge and experience; but in this club not a half, nor one third, nor indeed any part, of the practical men is admitted. A succession of expensive apprentices indeed there has been, and their labours and the result of their experience are before us. The last batch of seedling gardeners are chiefly from Lincoln's Inn *; and they will no doubt soon teach the world how to cultivate the vine and the fig, which none of their predecessors attempted. — *S. Kensington, May 14. 1830.*

We do not very well know whom our correspondent considers fit to prune the vine and grow a cucumber. Messrs. Malcolm, Young, Ronalds, Henderson, and Loddiges should know something about it; though perhaps not so much as Mr. Mackintosh, Mr. M'Arthur, Mr. Forrest, and other private gardeners. — Mr. Malcolm is said to have resigned his seat in the Council of the Horticultural Society, because he failed to keep down lavish expenditure, the creditors in the mean time pressing hard for payment. — *Cond.*

* Messrs. Harrison, Briggs, and Bentham are lawyers.

ART. X. Covent Garden Market.

The Cabbage Tribe.		From	To		From	To
		£ s. d.	£ s. d.		£ s. d.	£ s. d.
Cabbages, per dozen :				Celery, per bundle (12 to 15)	0 0 6	0 1 3
White	-	0 1 0	0 9 6	Small Salads {per ½ sieve	0 1 6	0 2 6
Red	-	0 6 0	0 10 0	{per punnet	0 0 2	0 0 3
Plants, or Coleworts	-	0 2 6	0 3 0	Watercress, per dozen small		
Savoy, per dozen	-	0 1 0	0 2 0	bunches	0 0 4	0 0 6
Broccoli, per bunch :				Burnet, per bunch	0 0 2	0 0 3
White	-	0 1 0	0 2 6	Pot and Sweet Herbs.		
Green	-	0 1 0	0 2 0	Parsley, per half sieve	0 1 0	0 1 6
Purple	-	0 1 0	0 2 0	Tarragon, per doz bunches	0 4 0	0 0 0
Brimstone	-	0 0 6	0 1 0	Purslain, per punnet	0 0 9	0 0 0
large single heads, per				Fennel, per dozen bunches	0 2 0	0 3 0
dozen	-	0 0 0	0 4 0	Thyme, per dozen bunches	0 6 0	0 0 0
Caustiflowers, each	-	0 2 0	0 2 6	Sage, per dozen bunches	0 2 0	0 0 0
Legumes.				Mint, per dozen bunches	0 2 0	0 0 0
Peas, per half sieve	-	0 0 0	3 3 0	Peppermint, per doz bunch.	0 1 0	0 2 0
Shelled, per quart	-	0 0 0	2 2 0	Marjoram, per doz bunches	0 0 0	0 8 0
Forced, per punnet	-	0 0 0	0 10 6	Savory, per dozen bunches	0 0 0	0 3 0
Kidneybeans (forced), per				Basil, per dozen bunches	0 0 0	0 12 0
hundred	-	0 2 0	0 3 0	Rosemary, per doz bunches	0 0 0	0 4 0
Tubers and Roots.				Lavender, dry, per doz bun.	0 0 0	0 3 0
Potatoes {per ton		4 0 0	5 0 0	Tansy, dry, per doz bunches	0 0 0	0 1 0
{per cwt.		0 4 0	0 5 0	Stalks and Fruits for Tarts,		
{per bush.		0 2 0	0 2 6	Pickling, &c.		
Kidney, per bushel	-	0 2 0	0 2 6	Rhubarb Stalks, per bundle	0 0 6	0 2 0
Scotch, per bushel	-	0 2 0	0 3 0	Angelica Stalks, per pound	0 0 0	0 0 6
New, per pound	-	0 1 3	0 2 6	Edible Fungi and Fuci.		
Jerusalem Artichokes, per				Mushrooms, per pottle	0 0 9	0 1 6
half sieve	-	0 1 6	0 2 0	Morels, per punnet	0 2 6	0 0 0
Turnips, White, per bunch	-	0 1 0	0 3 6	Truffles, per pound		
Carrots, per bunch :				English, dry	0 0 0	0 14 0
Old	-	0 0 6	0 0 8	Foreign	0 0 0	0 14 0
Young	-	0 1 0	0 1 6	Fruits.		
Horn	-	0 1 0	0 1 6	Apples, Dessert, per bushel :		
Parsneps, per dozen	-	0 0 9	0 1 3	Nonpareils	1 0 0	1 10 0
Red Beet, per dozen	-	0 1 6	0 2 0	Golden Pippins	0 12 0	0 0 0
Skirret, per bunch	-	0 0 0	0 1 6	Golden Renettes	0 8 0	0 10 0
Scorzonera, per bunch	-	0 0 0	0 1 6	Apples, Baking, per bushel :		
Salsify, per bunch	-	0 0 0	0 1 6	Baking	0 4 6	0 6 0
Horseradish, per bundle	-	0 2 6	0 4 0	Reinette Grise	0 0 0	1 10 0
Radishes :				Pearmain	0 4 0	0 6 0
Red {per doz. hands	{ (24 to 30 each,	0 0 4	0 1 6	Pears, Baking, per half sieve	0 2 6	0 3 6
{per bunch		0 0 1	0 0 6	Peaches, per dozen	0 0 0	2 2 0
White Turnip, per bunch	-	0 0 1	0 0 6	Nectarines, per dozen	0 0 0	2 2 0
The Spinach Tribe.				Almonds, per peck	0 7 0	0 0 0
Spinach {per sieve		0 0 9	0 1 6	Cherries, per pound	0 0 0	1 11 6
{per half sieve		0 0 6	0 1 0	Gooseberries {per ½ sieve	0 4 0	0 8 0
Sorrel, per half sieve	-	0 0 9	0 1 6	{per pottle	0 0 6	0 0 9
The Onion Tribe.				Currants, green {per ½ sieve	0 4 0	0 6 0
Onions, Old, per bushel	-	0 6 0	0 10 0	{per pottle	0 0 6	0 0 9
Leeks, per dozen bunches	-	0 1 0	0 2 0	Cranberries, per gallon	0 0 0	0 3 0
Garlic, per pound	-	0 1 0	0 2 0	Strawberries, forced, per		
Shallots, per pound	-	0 3 0	0 5 0	ounce	0 0 6	0 1 3
New, in bunches	-	0 0 3	0 0 6	Pine-apples, per pound	0 12 0	1 4 0
Asparagus Plants,				Hot-house Grapes, p. pound	0 12 0	1 10 0
Salads, &c.				Cucumbers, frame, per brace	0 1 6	0 3 6
Asparagus, per hundred	-	0 1 6	0 12 0	Oranges {per dozen	0 0 9	0 2 6
Sea-kale, per punnet	-	0 1 0	0 1 6	{per hundred	0 3 0	1 0 0
Lettuce, per score :				Bitter Oranges, per hundred	0 6 0	0 28 0
Cos	-	0 1 0	0 2 6	Lemons {per dozen	0 1 0	0 2 0
Cabbage	-	0 0 4	0 1 0	{per hundred	0 6 0	0 14 0
Endive, per score	-	0 1 3	0 2 6	Sweet Almonds, per pound	0 2 9	0 3 0
Buccory, per bunch	-	0 0 0	0 0 3	Brazil Nuts, per bushel	0 12 0	0 14 0
				Spanish Nuts, per bushel	0 3 0	0 0 0
				Barcelona Nuts	0 5 0	0 0 0

Observations.— Forced peas in punnets were produced on the 27th of April; from the natural ground under the protection of good walls, on this day, at the prices stated in the list. In my remarks in the corresponding month of last year, I considered the early single frame peas to be preferable for general crop to Bishop's early dwarf; I have induced a friend to try them in a protected situation, and he reports the Bishop's early to have dropped its blossom eight or ten days before the early frame: consequently for

the first gathering in gentlemen's gardens it may be preferable; but, for a general crop, the frame pea, in my opinion, will maintain its character. Those sold to-day were of the latter; the former were offered, as observed, on the 27th of April; the difference in time, as to being brought to market, between this and the preceding spring is only five days, whereas the season in general is, I think, in advance fourteen. Our supply of rhubarb for tarts has been, and continues to be, very great; and from the improved varieties recently introduced, promises to be supported in the ensuing season, if possible, with much larger quantities. The demand for it increases commensurately, and appears to justify the position maintained by many writers, that demand, supply, and prices assimilate very readily if left to themselves. I have ascertained the weight of several bundles of rhubarb taken this season (containing sixteen stalks) to be from 23 to 26 lbs., giving $1\frac{1}{2}$ lbs. each stalk as the average. The varieties were Dulley's Goliath, and Myatt's new Atlas seedlings; the quality and flavour quite equal to any others. Cabbages of the London, Battersea, or Fulham variety, were brought to market on the 17th of April: formerly the same period in May was considered early; and they have been sold in my recollection at 2s. 6d. per doz. as late in the season as the 29th, by which time now we have an abundant supply of peas, and some cauliflowers generally. It is singular that the earlier but smaller varieties of cabbages, such as the early dwarf, York, &c., are not cultivated in the neighbourhood of London, as under the same favourable culture and attention they would, I think, furnish a supply at least ten or twelve days earlier, and make up by the quantity from the same extent of surface for the difference of size and weight in the others. We had gooseberries in pottle on the 13th of April, and on the 1st of May in sieves and bushels, showing at once how much the improved varieties and methods of culture assist in furnishing an immediate supply to what formerly existed, when a month usually elapsed from their first appearance to the coming in of quantities in general: since the 1st of May to the 11th inclusive, not less than seven or eight hundred sieves have been disposed of in Covent Garden Market alone. Early turnips of the Dutch variety were produced about the 10th of April, and sold for 3s. 6d. per bunch; it has been usual for the grower to obtain 5s. The difference of price of this and many other articles both in fruit and vegetables of the earliest growth and rarity will, I think, warrant the conclusion I ventured upon in a former Number as to the cause of it: for instance, five guineas was the price usually given for the first half sieve of peas, now three only; for cherries three guineas per lb. has been obtained, now from one and a half to two is the most; nectarines and peaches, formerly 3l. per dozen, now two guineas; asparagus, of the best and largest quality, formerly 8s. to 10s. per hundred, now 6s. or 7s., and every other article of indulgence and gratification in the vegetable and fruit market appears to be determined by the same relative proportionate value. — G. C. May 11. 1830.

ART. XI. *The London Nurseries.*

KNIGHT's Exotic Nursery, King's Road, Dec. 21. — An orangery has just been completed here, which, in several respects, is worthy of public inspection. It is 50 ft. long, 20 ft. wide, 6 ft. 6 in. high in front, and 16 ft. high at the back wall. In front there is a shelf 4 ft. broad, of open woodwork, at the height of about 3 ft. from the ground; in the back, within 4 ft. of the top of the wall, there is another shelf of similar breadth of open wood-

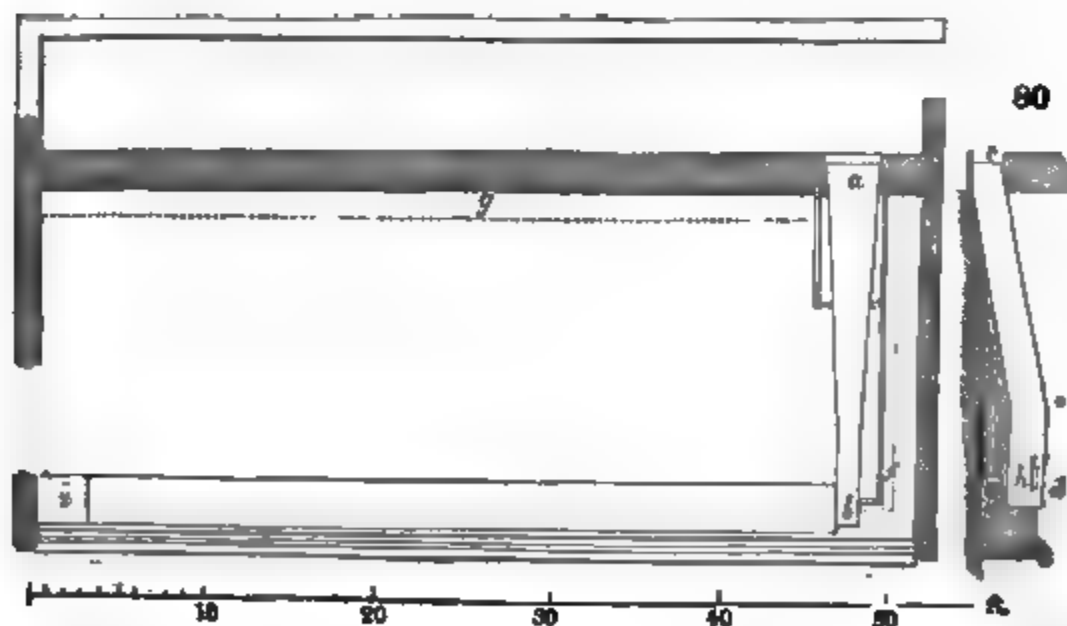
work; and within 18 in. of the top of the wall a shelf about a foot wide. These two shelves are for striking cuttings, and for growing very small and young plants. The pots are watered and otherwise managed from the back shed, through openings about 2 ft. high by 3 ft. wide, in the upper part of the back wall. These openings, communicating with the loft of the back shed, are well adapted for the purposes of ventilation in very severe weather. Instead of a lock to each opening, Mr. Knight has formed a passage behind them, the whole length of the shed; so that by locking the door of this passage, he secures the whole of the openings. The enclosure partition is an open paling for the purpose of admitting a free circulation of air. All the rain water that falls on the back shed, the eaves of which, as it is two stories in height and narrow, are higher than those of the glass, is conducted into a cistern in the enclosed passage, for watering the upper shelves; and all the water which falls on the glass is conducted into a large tank under the floor of the house, for watering the smaller orange trees on the front shelf, and the large ones in tubs on the floor. The floor is of earth, and might be lowered by excavation 5 or 6 ft., if additional height were wanted for very high old orange trees; it is now covered with large old trees in boxes, placed among some half-spent dung and leaves. The door of the house is at one end, in two parts, so that when both are opened there is an opening 6 ft. by 10 ft. for the passage of large trees.

But the principal feature in this house is the mode of heating it by hot water. If the reader will turn to Vol. IV. p. 29., he will find that the Marquis de Chabannes placed his fire in the middle of a horizontal cylinder of water; Mr. Knight has greatly improved on this principle by placing his fire in what may be called a flue of water (*fig. 79.*). This flue, the top view



of which may be seen in *fig. 80. a to b*, and the side view in the same figure *c to d*, is about the ordinary size of a hot-house furnace within, and it ascends and gradually diminishes to the minimum size of a hot-house flue, at about 18 ft. from the furnace. The outer plate of iron is not more distant than from one half to three fourths of an inch from the inner plate, so that the stratum of water is nowhere more than three fourths of an inch in thickness. This stratum might have been continued under the flue as well as on both sides and the top, but this was not deemed necessary. The

rise from the furnace to where this flue boiler assumes the level position (*fig. 80. e*) is 2 ft.; the exterior sides of the flue are there 18 in. deep, and



the top 12 in. wide. The smoke passes from the flue boiler through its extremity (*b*), and enters a common brick flue (*f*), in which it is carried into an upright flue to the chimney top over the fireplace; or, by means of dampers, it is made to enter another flue (*g*), and make a return in the back wall, by which it may be fairly presumed as much heat is obtained from the fuel and smoke as is practicable. The heated water proceeds from

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the flue boiler by a horizontal opening (*h*), and enters a shallow tube 3 ft. wide, and about half an inch deep (*fig. 81.*); it proceeds along

this tube till it enters a cistern (*i*) at the other end of the house, from the bottom of which it returns by a cylindrical pipe (*fig. 82. k*), and this pipe when within 5 or 6 ft. of the fireplace, or lowest point of the boiler (*l*), divides, so as to return the water in equal portions at the bottom of each side of the boiler (*fig. 82. m* and *fig. 79. n*).

It is evident that by this arrangement very little heat can be lost, and also that the heat communicated to the water surrounding the fireplace will be very rapidly carried to the cistern (*fig. 80. i*), at the other extremity of the house. Should it be desirable at any time for the sake of a gentle steam, the covers of the broad shallow tube (*fig. 81.*) can be taken off, while, when no steam is wanted, the water joint (*fig. 83.*) is effective in excluding it. This mode of

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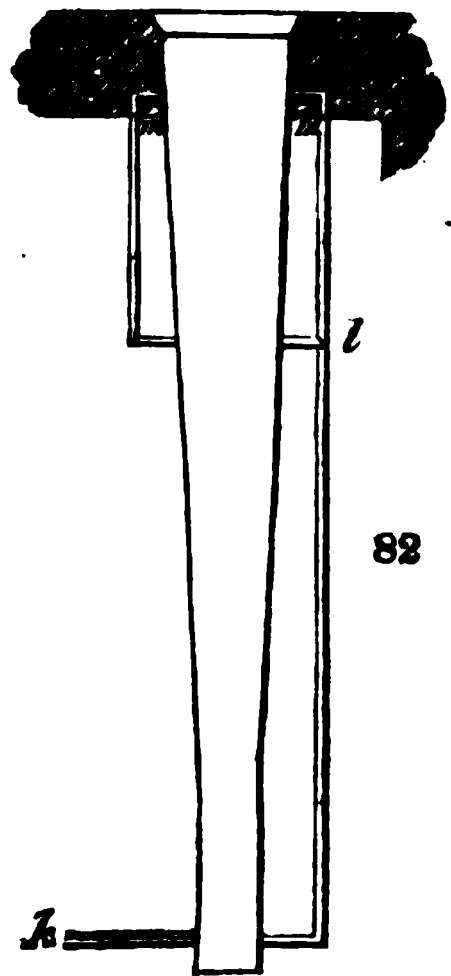


constructing these water plates with a water joint gives them a considerable superiority over the thin plates of Mr. Weekes (Vol. V. p. 544.); but Mr. Knight's covers are too large for being conveniently lifted off and re-

placed. This, however, is easily remedied.

The small quantity of fuel, even shavings, that will heat the water, and the short time required for this purpose, are not a little surprising, and only to be accounted for by the extraordinary capacity of water for heat. The same quantity of shavings burnt in a flue, surrounded by brickwork, instead of iron and water, would generate the same quantity of heat, but the brickwork being a non-conductor, a great portion of heat must necessarily be carried along the flue, and unless this is of great length, out at the chimney top. This familiar case must convince the most ordinary capacity, that heating by hot water, besides its numerous other advantages, must produce a very considerable saving of fuel. On the whole, though this plan might certainly be improved on, as far as neatness of appearance, and perhaps also economy, are concerned, it may be considered a valuable variation, and creditable to the spirit and judgment of Mr. Knight. — *Cond.*

Further Particulars by Mr. Knight himself, dated March 3. — Dear Sir, When you favoured me with a visit and inspected my hot-water apparatus at the commencement of the late severe frost, soon after it was erected, I could not speak positively as to its merits or imperfections, since that time there has been abundant opportunity to prove its efficacy during the long severe winter; and as several of my visitors, who are constant readers of your Magazine, wish much to have a plan and description by them for reference, I beg to offer the following remarks:— What is in reality my boiler is also a flue, which, from the furnace, for 13 ft. 6 in. is on the ascent of nearly 2 in. in the foot, and for 5 ft. 6 in. is on a level, making in the whole 19 ft.; the two sides, which are nearly 18 in. deep, and



the top, which averages full 1 ft. wide, are constructed of two plates of cast iron, allowing a cavity for water of three quarters of an inch, presenting an internal surface, on which the fire acts, of 70 ft. superficial, or rather more, and of course giving an equal external surface, which is all within the house. The furnace is of the usual form; but, instead of brick or tiles, the iron plates and water form the two sides and top, 19 ft. long, at the end of which the smoke is conducted into a brick flue of the common construction. At the extremity of the boiler, connected with the level part, a cast-iron table of 3 ft. wide is fixed, forming a right angle, which conducts the hot water to the other extremity of the house, where it passes into a cistern, from the bottom of which it returns again by a common round cast-iron pipe, which branches near the boiler, into which it again returns the coolest water, on each side, close by the fire. The table upon which the water flows rests upon iron stands, and is on a true water level; it has edges 1 in. deep, so that a thin sheet of hot water three quarters of an inch deep, flows over the 3 ft. surface of the table, upon which lids are placed, so constructed as to enclose the steam; these may be in part or entirely taken off at pleasure, by which dry or damp heat may be obtained, as the various seasons and objects may require, which advantage all practical gardeners know well how to appreciate. The rate at which the water moves along the table varies according to the greater or less heat it contains: when at about 140° it moves at the rate of about 10 ft. in a minute.

The house in which I have erected this apparatus is new, it is full 50 ft. long, 20 ft. wide, 6 ft. 6 in. high in front, and 16 ft. 6 in. high at the back; roof glass, containing about 1150 ft.; the front is glass about half down, and contains 150 ft.; back and ends are brick, except the doors, and contain about 11,500 cubical feet of area, which by this apparatus has, during the late frost, been kept up to 50° of heat with the most moderate consumption of fuel, in the most severe nights it did not appear to have exceeded from half to three quarters of a bushel of small sifted coals in 24 hours. I am not aware that the water has ever been heated in the boiler to more than 140° , which will appear sufficient when I state the extent of superficial surface from which I derive heat: my boiler is entirely in the house, and presents an external surface of full 70 ft., the table 3 ft. wide, taking the upper and under surface, produces about 300 ft., making together 370 ft., not taking into account the cistern and returning pipe, which present nearly 100 ft. more. The whole quantity of water my apparatus contains is about 70 to 80 gallons, on which the fire acts so powerfully and instantaneously that it is set in motion in less than three minutes after the fire is lighted; and I have no hesitation in saying, that it could be made to boil in ten, by stopping the circulation of the water.

Should the above description not prove sufficiently explicit, I beg to add that it is open to inspection, and I shall have pleasure in explaining, as far as I can, any thing difficult about it. It is, I consider, just and right to add that my apparatus was made and put up by Mr. George Jones of the Phoenix Foundry, Snow Hill, Birmingham, whose attention, liberality, and workmanship are, I consider, highly creditable to him, and have been entirely satisfactory to me. I remain, dear Sir, &c. — *Joseph Knight. Exotic Nursery, King's Road Chelsea, March 3. 1830.*

Exotic Nursery, May 1. — The large plants of *Rhododéndron arbóreum* have now a magnificent appearance in the lofty iron-roofed green-house, which indeed has given a new character to several old plants, by permitting them to attain something like their natural size. *Kennèdia monophýlla*, for example, which excites little attention in the common pot, is here planted in the ground, and covers a pillar upwards of 20 ft. high; few would believe the plant capable of producing such an effect. The orange trees in the house heated by hot water have made vigorous shoots, and are every thing that could be desired. The choice collection of foreign azaleas is

coming strongly into flower; and every part of the houses, back sheds, and grounds, displays that order and neatness which have always been characteristic of this nursery, and which, in our opinion, constitute an essential part of all garden management intended either to delight or instruct, we might even say to be useful or profitable. Mr. Knight has paid an interesting visit to Holland this spring, some notice of which we have already given (p. 317.). — *Cond.*

Colville's Nursery, King's Road, Jan. 3. and May 1. — The hot-house and show conservatory here have been heated by hot water, on the siphon principle of Mr. Kewley, the ingenious inventor of the automaton gardener described in our *Encyclopædia of Gardening*, and one of the most scientific engineers we know. The late Mr. Tredgold probably excelled Mr. Kewley in science, as he unquestionably did in experience, but we do not think he surpassed him in fertility of invention. We are most happy to find that Mr. Kewley has turned his attention to the hot-water system of heating, and intends to devote all his time to it, because we are certain he will effect improvements. The cooperation of such an engineer as Kewley with such liberal, enlightened, and economical tradesmen as Cottam and Hallen, would be a real good to persons desirous of heating large buildings either for plants or animals.

Mr. Kewley's Mode of Heating on the Siphon Principle differs from that of Mr. Fowler already described (Vol. V. p. 453.), in employing a pump, fixed or movable at pleasure, to exhaust the air, and consequently draw up the water into the siphon, instead of employing cocks and pouring in the water. We have tried the cock system ourselves, and certainly we think it occupies more time than Mr. Kewley's, and we do not think the latter system more expensive, or more likely to go out of order. We refer however to Mr. Dalgleish's report on Mr. Fowler's method (p. 334.), having never seen it in operation extensively ourselves. Next winter we shall adopt Mr. Kewley's system, and about this time twelvemonth we shall probably be able to report on it. The great advantage of the siphon system is, that there is no pressure on the boiler, and consequently no danger of bursting, and less tear and wear of apparatus. Where water can be circulated on the same level with that in the boiler, the siphon system is unnecessary; but in all other cases we certainly should prefer it to the closed boiler or pressure system. We know some cases, in which, owing to the water during the last severe winter having frozen in the circulating pipes, the boiler burst.

The Plants in Mr. Colville's Houses look remarkably well, and, as usual, there is an ample stock of forced articles and showy spring flowers. Mr. Colville bought the greater number of the cow tree and other plants brought by Mr. Fanning from the Caraccas; and it is due to Mr. Colville to state that Mr. Fanning told us, a few days before his departure, that Mr. Colville was almost the only man he could get any money from. A nobleman bought fifty pounds' worth of these plants from Mr. Fanning, and put off the payment from time to time, till at last, we believe, Mr. Fanning went off without having received the money. We know he had not received it two days before his departure. Some of the cow plants are budding, but we very much doubt whether they will ultimately live. — *Cond.*

The Sloane Street Nursery, April 25. — Mr. Tate has built a lofty orangery, and introduced into it some very large imported trees. The sides and ends of the house are of masonry or timber-work, and all the light the trees receive is from a few windows in the roof. A useful orangery is thus erected at little expense, and one, we believe, as effective for preserving the plants during the winter as if the roof and south side had been of glass. Those who use such orangeries, however, must take off the roof and south fronts, which can easily be contrived for that purpose, and substitute glass, bunting, or netting, for them, in the growing season in the end of April

and during May. After this the trees may be removed to sheltered places in the pleasure-ground, and the boxes sunk in the earth and turfed over, so that the trees may appear to be planted in the soil. Mr. Tate thinks this may be done to an extent of which few, we believe, are bold enough to have any idea. He thinks the avenues to mansions might just as well be of orange trees as of lime trees or elms, provided gentlemen would be at the trouble of placing temporary wooden houses over them. In Mr. Tate's shop are some handsome vases and orange boxes formed of a sort of artificial stone, cheap, and very durable, which deserve to be brought into more notice than they have hitherto been. They are manufactured by an artisan in the road leading to Vauxhall Bridge. — *Cond.*

The Hackney Botanic Garden, Messrs. Loddiges, April 3. — Notwithstanding the severity of last winter, the house plants here look remarkably well. Some of the larger palms had their boxes renewed and increased in size; the material as before, the teak wood of old East India ships, which Messrs. Loddiges find far more durable than oak. The collection is constantly increasing by donations and purchases from all quarters.

The Clapton Nursery, Mr. Mackay, April 3. — Great alterations have taken place here within the last twelve months. Several new houses have been added, old ones taken down and rebuilt, and hot water substituted for steam in the same pipes; the siphon principle, to a certain extent, has also been here adopted. The general stock of plants is increased both in number of individuals and species. Mr. Baxter, who has been employed in Sydney for nearly seven years, chiefly on Mr. Mackay's account, has recently returned with a magnificent collection of specimens and seeds; some of which, we understand, are for other nurserymen, but the greater part, we believe, will be disposed of to Mr. Mackay.

The Hammersmith Nursery, April 4. — Some alterations have been made in the department of rare trees and shrubs, and some curious species of pendent and odd-growing robinias, caraganas, cytusus, &c., grafted standard high on their congeners. Here, as in Malcolm's nursery, Kensington, *Magnolia conspicua* and *purpurea* bloomed in great profusion.

The Camberwell Nursery, Buchanan and Co., May 4. — An arboretum is commenced here in alphabetical order, and it is the intention to increase it by adding every hardy tree or shrub that can be purchased from the nurserymen of Europe and America; to lay down stools and to propagate each species and variety extensively. This is a most commendable exertion, and is certain of being attended with success. We have long ago recommended the same thing to other nurserymen, and especially to those so favourably situated as Mr. Donald of Woking. One of the principal reasons why there is such a paucity of rare and beautiful trees and shrubs in the grounds of country seats is, their scarcity or high price in the nurseries; another reason, we are aware, is, the ignorance of gardeners that there are such shrubs and trees; but this ignorance is a result of the former circumstance, and will disappear when it is removed. Let us once have all manner of rare and beautiful shrubs abundant and cheap (and there is no reason in the nature of things why the rarest and most beautiful should not be as cheap as the commonest), and every citizen who can shelter his kitchen-garden with a shrubbery, or plant a belt round his paddock, will employ half as many kinds as he requires plants. A shrubbery of 1000 trees and shrubs will contain at least 500 species. A park will be a complete arboretum; and a park and pleasure-ground taken together will contain a collection of hardy things equal to that now in the Hackney garden. Various minor improvements are going on in this nursery, which we cannot spare room at present to enumerate.

Groom's Flower-garden, Walworth, May 4. — The tulips have bloomed very vigorously this season, and are perhaps taller than usual. Mr. Groom persists in mixing all the different varieties indiscriminately, which is a great

defect in our eyes, but not so, it would appear, in the eyes of florists. The beds of double tulips are very showy. Here, as elsewhere, the double *Narcissus poeticus* is apt to degenerate into semidouble and single. Our readers will perhaps recollect the new or German feature in the culture of ranunculuses which Mr. Groom has practised, that of planting at different times so as to have a succession of bloom from May or June till October or November (see Vol. V. p. 293).

The New Cross Nursery. — Messrs. Cormack and Sinclair have, we understand, taken a part of one of the immense green-houses in the magnificent new building covering Covent Garden Market, and intend keeping there a succession of green-house and other plants in pots in flower for sale. They also mean to combine a seed-shop, and a reading-room containing some of the most useful gardening and agricultural books and models of whatever is new or remarkable. This will be a feature in Covent Garden Market of real utility to the public, and of great interest to the amateur. When this market is completed it will be one of the finest things of the kind in the world, and alike honourable to the Duke of Bedford, the architect Mr. Fowler, who is also the architect of the botanic range at Syon, and of the builder, to whom architecture is as much indebted as to any man, Mr. William Cubitt. We are promised a plan, isometrical view, and description, which, as soon as the market is finished, we shall lay before our readers.

Knap Hill Nursery, May 10. — We have just had an opportunity, for the first time, of seeing the azaleas here in full bloom; and certainly we never witnessed any thing of the kind so splendid. There are masses of *A. coccinea*, and of several of the red and orange varieties of *nudiflora*, *pontica*, and *calendulacea*, 12 ft. high and 20 or 30 ft. in diameter, completely covered with blossoms, and perfectly dazzling to the sight. What will astonish many is, that these plants may be taken up in full bloom without the slightest injury. The reason of this is, that the plants of the whole order of *Ericæ* comprehending twenty-five genera of the most beautiful of our hardy shrubs, have no roots but such as are small and hair-like, and require to be grown in peat, which closely adheres to these roots, and rises in a mass larger or smaller, as the roots have extended more or less far from the plant. So small are these roots, and at the same time so numerous, that it is next to impossible to separate the earth from them; so that an azalea, a rhododendron, a vaccinium, or an andromeda, cannot be taken up for removal at all without being taken up with a ball. It is important to have this fact and the reasons for it generally known and understood; because it will show three things highly favourable to the spread of this order of plants all over the country. The first is, that as the roots, from being so very small, cannot extend far from the plant, only a small quantity of peat earth is required; the second is, that from the great number of these small roots, no plants are so easily lifted with balls; the third is, that in consequence of these balls about the roots, no plants suffer so little by packing, distant carriage, and remaining for weeks or even months out of the soil. If the azaleas and other *Rhodoracæ*, therefore, are not common every where, it must be because there is little taste for them, or because it is not generally known that they are so preeminently beautiful; it cannot be owing to price, for many sorts are now as cheap as other shrubs. Whoever is building a house, and wishes to produce an immediate effect in the grounds, should purchase a few dozens of azaleas and rododendrons of 5 or 6 ft. in height, and 6 or 8 in. diameter. Had the king's flower-garden at Windsor, the scenery at Virginia Water, the grounds at Buckingham Palace, and the Duke of Wellington's lawn at Apsley House, had a few of these shrubs scattered over them, how different would have been their effect! But of all the situations that we know of, for showing off such plants to advantage, the fittest is the lawn in front of the Marquess of Hertford's villa in the Regent's Park. There they would not only be enjoyed by the marquess and

his friends, but at a distance by every person in the public road, i. e. by all London. If this admiration of all the public has no charms for the marquess, he must be without sympathy. We never pass his grounds and look over his fence at the common trash planted within, without regretting that the taste which he has so well displayed in architecture had not extended itself to gardening. As to the Duke of Wellington, it is not to be supposed that he can afford a thought on the subject of lawn or flowering shrubs; and we must therefore content ourselves with regretting the want of knowledge or taste in the directors of his establishments. Economy is the order of the day in every department of the king's gardens, and therefore large shrubs like Mr. Waterer's could never be expected to find their way to Windsor or Pimlico.

Among the plants that we noticed more particularly, was *Rhodéndron máximum*, in large quantities, from 4 to 6 ft. high, trained as standards; the trunks of some of them 3 in. in diameter; a hybrid *R.* called *Watereriana arborea*, in standards from 5 to 7 ft. high, and *R. catawbiense*, from 4 to 6 ft. high. These standards promise, by the thickening of the stems or trunks, to be of great duration, and to attain a considerable size of head, probably that of an apple tree. *R. caucásicum* is in large quantity, as is a new variety between *arboreum* and *pónticum*. *Azàlea autumnàlis*, *rubescens*, and *viscosa álba* are late-flowering sorts, and on that account very valuable. *A. póntica multiflora pàllida* is a variety which never fails of being profusely covered with flowers. *A. coccínea màjor* and many other kinds are to be had in quantities from 4 to 7 ft. high; and some of them, when cut down, or when allowed more room by the removal of adjoining plants, throw out shoots from 3 to 5 ft. long in one season. *Kálmia latifolia* in quantities from 4 to 6 ft. high, *K. gláuca strícta*, *gláuca rúbra*, and *gláuca supérba* are fine new varieties, which will be sold for the first time next autumn. An immense number of new varieties have lately been raised by Mr. Waterer, from seed, many of them now in flower, and surpassingly beautiful. The varieties of azalea are now as numerous as those of roses, tulips, or georginas; and it were much to be wished that some such botanist as Mr. Sweet or Mr. Penny would class them in groups, and give a name to each group, the specific of which might be any fanciful name; such, for example, as *A. coccínea màjor* (the variety constituting the group), 1. Waterer's Eliza; 2. Donald's Marianne; 3. Cree's Jane, &c. &c. (The sub-varieties springing from the parent variety, or resembling it.) We last season (Vol. V. p. 571.) noticed the fine magnolias, and various other trees and things here, and though we could again dwell on them with much pleasure, we shall deny ourselves that gratification in order to make a remark on the soil. This is a natural peat, and therefore peculiarly adapted to the *Eríceæ*; but the plants on that account, though grown at less expense, are not better grown than in those nurseries where the peat is artificial, or brought from a distance and placed in excavations 18 in. deep, perhaps not so well. The reason is, that the wet cold bottom, besides lessening the vigour of the shoots of the more delicate varieties, has a tendency to cover the bark with lichens. No nurserymen or private grower, therefore, need be discouraged by the want of a native bed of peat. Many of the *Eríceæ* will grow in soft sand nearly as well as in peat.

Goldworth Nursery, May 11. — Mr. Donald is new-modelling his home grounds, and preparing for planting a collection of stools of all the rare hardy trees and shrubs which he can procure, with a view to their propagation for the trade. We are very happy to learn his intention, because it will be the second step, that of Messrs. Loddiges being the first, towards rendering rare trees cheap, and consequently common in parks and pleasure-grounds.

The Oaks, May 12. — This is a large farm, the property of — Garment, Esq., of South Audley Street, London, admirably managed by a

Northumbrian intendant, Mr. Hill, whose example of the convertible husbandry, turnips on raised drills, &c., is, among the wretched farming which surrounds him, like an oasis in a desert. We saw here a field of winter beans, sown in October last, and now in full bloom; their having stood uninjured through so severe a winter is a proof that this is a distinct and very hardy variety. Mr. Hill says they will be fit to reap in the last week of July, or at least one week before the earliest wheat, barley, or oats. The value of the variety, therefore, is unquestionable.

Horsefield and Woking Subscription Lancasterian School, May 11.— There are two hundred scholars, who pay nothing; and the girls, besides the ordinary branches, are taught needlework. We heard them read, and repeat a catechism, with numerous texts of Scripture cited, in the manner of a catechism called in Scotland the *Proofs*, and the getting of which by heart formed the horror of our earliest years. The accuracy with which the questions were answered and the numerous citations adduced was to us perfectly astonishing, considering their number and the infancy of the children. As an exercise of the memory, this may do the children good; but as to their acquiring any useful knowledge, either moral or religious, from such a catechism, the thing is next to impossible. It is lamentable to see the infant mind burthened with mysteries, not one of which it can possibly understand. How much better to teach them natural history, every fact of which would give them a new interest in the objects with which they are surrounded, which they could turn to real account in every department of country life, and which would amuse them beyond measure even in going to and returning from school! Morality and humanity, in the most extensive sense, ought on no account to be omitted in what is taught to infants, but surely religion ought to be left till the reason is matured. 'When we talked to Mr. Clark, the master, about chemistry, botany, geography, &c., he said, "What! make doctors and parsons of them?" He had seen too many boys turn men to be able to alter his opinion, but the time must come when all useful science will be taught to all; and it rejoiced us not a little to perceive, in the astonishing memories of these little children, with what wonderful rapidity they will drink it in when it shall once be offered to them, and thus to foresee the millennium of happiness which awaits the human kind, and of which even the brutes around man will necessarily partake.

Addlestone Nursery, May 12.— We were much gratified in looking over this nursery, which contains more rare herbaceous plants than any of the country nurseries, with the exception of that of Messrs. Young at Epsom, and is inferior to none in general arrangement. Mr. Cree, his seed-shop, his hot-houses, his dwelling-house, and all that is about him, are just what we should expect or wish to surround the author of such an excellent catalogue as the *Hortus Addlestonensis*. We regret that want of time and room prevents us from going into details. The nursery was formerly celebrated for variegated plants, of which there are still a number not to be found any where else; for instance, *Pinus Pináster*. We saw *Leucòjum vérnum*, which had flowered in February, very strong, and producing seed, a plant now rare in the nurseries; *Cactus Opúntia*, which has lived in the open air under a wall without any protection for thirty years, and ripened fruit every year; a Lombardy grape, which covers the end of a house, and bears abundantly every year, and which Mrs. Cree finds a most valuable grape for making wine; and an excellent collection of azaleas, which are numbered in the Seton manner, that every one may not be able to know the best sorts, and probably steal them. We regret to learn that stealing, hitherto little known in the nurseries in this part of Surrey, is beginning to take place; Mr. Donald, Mr. Waterer, and Mr. Cree having lost several things during the past winter. This ought to make all who purchase trees

or plants from jobbing gardeners and hawkers extremely cautious. A very neat green-house and propagating stove, with stone shelves, span roof, &c., heated by hot water by Cottam; numerous well constructed pits; and numerous small compartments, enclosed with hedges, for the rarest plants, are also to be found here. There is an extensive nursery for fruit and forest trees at some distance, which we had not leisure to visit.

Claremont, May 13. — The kitchen-garden here is in admirable order, and the crops of every kind excellent. Our readers have seen (Vol. V. p. 180.) that Mr. M'Intosh can write well on gardening, and we can assure them he is equal to any man in the country in practice. He has cut pines all the winter, and has now some ripe, as well as a house of ripe grapes; and strawberries of course in abundance. The fruiting pines are grown in pits of leaves in small pots, on the earthing-up plan, which saves labour and produces very large fruit. Cauliflowers and peas have been gathered some days ago; potatoes, from pits, all the winter. Mr. M'Intosh pointed out to us a border of Keen's Seedling strawberry in a very forward state, and more than ordinarily luxuriant, which he said was owing to the plants having been forced the preceding season, and afterwards turned out of the pots in the open border. They had thus a longer summer than usual to acquire strength, and by being forced they had anticipated the flowering season, or, in other words, partaken a little of an early habit. A new and superior cress was pointed out, which we hope will find its way to the seed-shops. The hot-house plants, of which there is a good collection and some rare species, are in excellent order; and a central group of azaleas, in a small Dutch garden, made a fine appearance. We had not time to walk through the pleasure-ground.

The Kensington Nursery, May 14. — This is one of the closest-cropped nurseries about the metropolis, and one containing excellent collections of American, British, and Belgic azaleas and vacciniums, which thrive well. We notice it at present for the sake of calling attention to the *Erinus alpinus*, which has taken possession of the tops of the hot-houses and brick walls, is now beautifully in bloom in sheets of purplish red, and affords a fine hint for ornamenting walls and ruins in the country. — *Cond.*

ART. XII. *Provincial Horticultural Societies.*

ADDRESSES of Secretaries, in alphabetical order: —

Aberdeenshire Horticultural Society, Alexander Bell, and J. Ig. Massie, Secretaries; April 24.
Bristol Horticultural and Botanical Society, John Miller, Treasurer and Hon. Sec.; April 24.
Montrose Horticultural Society, Charles Sharp and John Mitchell, Secretaries.
Saffron Walden Horticultural Society, Samuel Fiske, Esq., Saffron Walden, Essex, Secretary; April 30. 1830.
South Devon and East Cornwall Botanical and Horticultural Society, Elias Northgate, Secretary; April 24.
Worcestershire Floral and Horticultural Society, John Evans, Grove Place, Worcester, Hon. Sec.; April 2. 1830.

ESSEX.

Chelmsford and Essex Floral and Horticultural Society. — This Society held their First Exhibition this year on April 20., which was respectably and numerously attended. (*Country Times*, April 26. 1830.)

CAMBRIDGESHIRE.

Cambridgeshire Horticultural Society. — This Society held their First Show this year on March 3. Notwithstanding the unfavourableness of the season, the Show was very excellent, and well attended. The Rev. G. A. Browne was called to the chair, and announced the following adjudication of prizes: —

Flowers. Hyacinths: No first prize; 2. Unknown (grown in the garden of the Provost of King's), Mr. Catling. Polyanthus Narcissuses: Soleil d'Or, Grand Prince Cibionier, Mr. Dall. *Camellia japonica*: No first prize; 2. Mr. Searle. — *Fruit.* Apples, table, with method of keeping: 1. Nonpareil, Golden Harvey, C. Pemberton, Esq.; 2. Ribston Pippins, Nonpareil, Mr. Palmer, Ely. Baking, with method of keeping: Large Russet, Catchhead, Mr. Dall. Peas, table, with method of keeping: Colmar, St. Germain, Col. Pemberton. — *Culinary Vegetables.*

Celery, white, Col. Pemberton. Rhubarb, Mr. Catling. Sea-kale, Mr. Hudson. Lettuces, Mr. Catling.

Extra-Prizes. Succory, Mr. Dall. Seedling Apples, Mr. Brown, Fordham. Asparagus, Mr. Lestourgeon. (*Huntingdon Gazette*, March 6.)

Another Meeting of this Society was held on April 21. The exhibition was most splendid and very large, and the company numerous and highly respectable. The Show was most tastefully arranged, and passed off with great *éclat*. At two precisely, the company was admitted into the hall, when the mayor, who was in the chair, announced the following adjudication of prizes:—

Flowers. Auriculas, four, one of a sort: Freedom, Netherfield Beauty, Venus, Metropolitan, Mrs. Lascelles. Of any colour: Revenge, Mrs. Lascelles. Seedling: No first prize; 2. Mr. Fordham of Hatley. Polyanthus: No first prize; 2. Bonaparte, Mrs. Lascelles. Seedling, Mr. Denson. Double Wallflower, in a pot: 1. Mr. Lestourgeon; 2. Mr. Widnall. Pinks, best pot. Mr. Challis. Double Primroses: Double Crimson, Double White, Double Scotch, Mr. Denson. — *Fruit.* Apples, table: Franklin's Golden Pippin, Mr. Gimson. Strawberries: 1. Keen's Seedling, Mr. Challis; 2. C. Pemberton, Esq.—*Culinary Vegetables.* Cucumbers: 1. Mr. Catling; 2. Mr. Fordham. Potatoes, forced: 1. (10 to the lb.) Ashtop Kidneys, Mr. Fordham; 2. (11 to the lb.) Ashleaved Kidneys, Mr. Challis. Broccoli, white, Col. Pemberton. Cabbage, Mr. Widnall. Rhubarb, not forced, Red, Mr. Shippey.

Extra-Prizes. Azalea indica alba, six Double Hyacinths, and Pears (Colmar and D'Auch), Mr. Biggs. Lettuces, Brown Dutch, Col. Pemberton.

The next Show was announced to take place on May 19., when prizes will be given to cottagers for double stocks grown in pots, and for cabbages and lettuces. It was also stated that the treasurer renews his bouquet prizes for the next four Shows. (*Cambridge Chronicle and Journal*, April 23.)

SUFFOLK.

Ipswich Horticultural Society.—The First Meeting for the present year was held on April 20. The judges were Mr. Buchanan and Mr. Garrod, with Mr. Sally as umpire; when prizes were awarded for cucumbers, table apples, French beans, asparagus, white and brown broccoli, cabbages, lettuces, plant in bloom in a pot (*Nerium splendens*), rhubarb, sea-kale, auriculas, and cottager's cabbages. The day proving exceedingly unpropitious, but few visitors attended. The medal received from the London Horticultural Society was presented to Mr. Robert Milborn, for the number of prizes gained by him, and the general excellence of his productions during the year 1828. (*Country Times*, April 26.)

GLOUCESTERSHIRE.

Gloucester Horticultural Society.—The First Meeting of this Society took place on April 16.; and, notwithstanding the late severe weather, the stages presented a most delightful appearance, and comprised some very rare specimens of stove, green-house, and hardy plants. The prizes in flowers, fruits, and vegetables cannot be spoken of too highly; and there being 27 new subscribers recorded at this Meeting, it is evident that the Society must soon take a very distinguished rank in these interesting studies. (*Country Times*, April 26.)

Bristol Botanical and Horticultural Society.—The First Spring Show of this Society was held on April 20. There were some very fine forced strawberries, of which Keen's Seedling gained the first prize. There was a good show of green-house flowers. The auriculas, polyanthus, and hyacinths were not so fine as those generally exhibited at the florists' dinner: no doubt the prime were kept back for next Friday. There was a variety of fine cucumbers, especially considering the late severe weather; also two or three samples of early potatoes, and an abundance of kidneybeans; besides some apples, so remarkably well kept, that they looked as if just gathered from the tree. The Show was well got up, and the change of room was evidently an improvement. (*Country Times*, April 26.)

NOTTINGHAMSHIRE.

The Nottingham Florists' and Horticultural Society.—On April 21. this Society held their First Exhibition for the present season. Notwithstanding the unfavourable state of the weather, there was a numerous and highly respectable attendance of visitors; the flowers exhibited were in greater perfection and beauty than previously, and the *coup d'œil* was truly imposing. We are happy to learn that there is a considerable accession to the number of subscribers. (*Country Times*, April 26.)

NORTHAMPTONSHIRE.

Northampton Loyal Horticultural Society.—This Society held their Spring Show of Auriculas on April 21., when the prizes were adjudged. (*Country Times*, April 26.)

NORTHUMBERLAND.

Botanical and Horticultural Society of Durham, Northumberland, and Newcastle upon Tyne.—A General Meeting of this Society was held on April 8., in Newcastle, when the prizes were awarded as follows:—

Dessert Apples, the silver medal to Mr. N. Bilau, gardener to the Rev. Joseph Cooke, Newton Hall; Baking Apples, and Bouquet of Flowers, silver medals to Mr. Thomas Cooke, gardener to T.W. Beaumont, Esq. M.P., Bywell Hall. Peas in the pod, the silver medal, Mr. James Ireland, gardener to Wm. Donkin, Esq., Sandoe. Early Potatoes (Egyptian Kidney), the silver medal; and Spring Broccoli (the New Pink), the bronze medal, Mr. Joseph Clarke, gardener to Mrs. Bewicke, Close House. Cucumbers, the silver medal; Bouquet of Flowers, the silver medal (this was an extra-medal awarded by the judges for the very great beauty and excellence of Mr. Ward's bouquet); and early Cabbages, the bronze medal, Mr. John Ward, gardener to Charles John Clavering, Esq., Axwell Park. Blanched Rhubarb, the bronze medal, Mr. Thos. Watson, gardener to James Kirsopp, Esq., Spital, near Hexham. Exotic Plant (*Beaufortia decussata*), the silver medal, Mr. John M'Cleish, gardener to A. J. Cresswell Baker, Esq., Cresswell. Green Gooseberry Wine, the silver medal, G. A. Lambert, Esq., Shieldfield, Newcastle. The beauty of the bouquets was universally acknowledged, especially of those of Mr. Cooke and Mr. Ward, the former of which contained a fine assortment of beautiful late tulips and double carnations in full.

blossom, a most surprising instance of skill and industry at this season of the year. Mr. Ward's was as rich in beautiful and choice exotica. Mr. D. Laidler exhibited a fine seedling auricula, which he named Miss Dunn. A magnificent specimen of that curious parasitical plant, the mistletoe (*Viscum album*), was exhibited by Mr. Joseph Cooke, gardener to Miss Simpson, Bradley Hall; and a beautiful dish of kidneybeans from the garden of Armorer Donkin, Esq., Jesmond. Upon the whole, we never saw so excellent an exhibition at this season of the year. (*Newcastle Courant*, April 17.)

DEVONSHIRE.

Exeter Florists' Society. — The First Exhibition for the season of this Society took place on April 15., at Exeter. The flowers were fine specimens of the auricula and polyanthus tribes, and in numbers sufficient to show the industry bestowed on, as well as delight taken in, the culture of elegant flowers of these descriptions by the members. The Exhibition, which was open to the public generally, was most flatteringly attended, many members of the Devon and Exeter Botanical and Horticultural Society honouring it with their presence. The prizes on this occasion were five in number; and awarded, the first for auriculas, to Mr. Samuel Haycraft, for a fine specimen of Wild's Lord Bridport; the first for polyanthus, to Mr. Charles Reynolds, David's Hill. The members of the Society afterwards dined, and spent a convivial evening together. Their next Exhibition will be of pinks and carnations. (*Country Times*, April 26.)

AYRSHIRE.

The Ayrshire Green-house Society held their Competition for hyacinths, auriculas, fruits, vegetables, &c., at Kilmarnock, on April 22., when the prizes were awarded as follows: —

Flowers. Hyacinths, Single Red: 1. Herstelde Vreda, Mr. John Brown, Kilmarnock; 2. Messrs. Dykes and Gentles, Kilmarnock. Double Red: 1. Bouquet Tendre, or Waterloo, Mr. J. Brown; 2. Messrs. Dykes and Gentles. Single White: 1. Grand Vainquer, Mr. John Brown; 2. Messrs. Dykes and Gentles. Double White: 1. Prins Van Waterloo, Messrs. Dykes and Gentles; 2. Mr. John Brown. Single Blue: 1. Vulcan, Messrs. Dykes and Gentles; 2. Mr. John Brown. Double Blue: 1. Lord Wellington, Mr. John Brown; 2. Messrs. Dykes and Gentles. Yellow: 1. La Pure d'Or, Messrs. Dykes and Gentles; 2. Mr. John Brown. Auriculas, Green-edged: Warris's Blucher, Clough's Dollittle, Cockup's Eclipse, Mr. John Brown. Grey-edged: Campbell's Robert Burns, Kenyon's Ringleader, and Butterworth's Lord Hood, Mr. John Brown. White-edged: 1. Taylor's Incomparable, Pott's Regulator, Lee's Bright Venus, Mr. John Brown; 2. Messrs. Dykes and Gentles. Self, or Alpine: King of the Alps, Mr. John Brown. Polyanthus: 1. Manners's Lady Ann Hamilton, Pearson's Alexander, Coxe's Prince Regent, Turner's England's Defiance, Stead's Telegraph, Mr. John Brown; 2. Messrs. Dykes and Gentles; 3. Mr. Robert Purvis, gardener to John Smith Cunningham, Esq., Caprington. Polyanthus Narcissus: Bazelman Major, Soleil d'Or, and Staaten General, Mr. John Brown. — *Fruit.* Apples, preserved, four sorts: 1. Norfolk Paradise, Ribston Pippin, Yorkshire Greening, and Scarlet Nonpareil, Mr. James Young, gardener to James Fairlie, Esq., Holms; 2. Messrs. Dykes and Gentles; 3. Mr. Robert Purvis. — *Culinary Vegetables.* Sea-kale: 1. Mr. Robert Purvis; 2. Mr. James Young. Parsneps: 1. Mr. Robert Roger, Kilmarnock; 2. Messrs. Dykes and Gentles; 3. Mr. Robert Purvis.

Of extra-articles, some very fine preserved apples of crop 1828, in a good state of preservation, radish, lettuce, and parsley, by Mr. Robert Purvis. Radish, Mr. James Young. *Pyrus japonica*, Messrs. Dykes and Gentles. *Trillium grandiflorum*, Messrs. Fowley and Symburn, Kilmarnock. A number of Auriculas, and a fine seedling Polyanthus, Mr. John Morton, Kilmarnock; and a great variety of polyanthus, auriculas, and primroses, &c., by Mr. John Brown. — *A Subscriber.* Kilmarnock, April 24. 1830.

ART. XIII. Obituary.

DIED, at his house near Glasgow, on the 14th of March, in his 76th year, Robert Austin, Esq., to the great grief of all his family. He passed some years in his early life at the royal botanic gardens at Kew, with the late Mr. Aiton, with whose family a sincere and reciprocal friendship has ever since subsisted. In the councils of the city of Glasgow, of which he was many years a member, his conduct as a magistrate received the approbation and esteem of his coadjutors and fellow-citizens. In his profession of a nurseryman, no man was more respected — not more for his scientific attainments and general knowledge, than for the suavity of manner and the glee and good-humour which he contributed so largely in society. To the young gardeners he was a steady friend, always ready with his advice to guide them and push them forward in the world — without pride or ostentation; in short, those only who had the advantage of his acquaintance can duly appreciate his value. — *W. M.* London, April 25. 1830.

THE
GARDENER'S MAGAZINE,
AUGUST, 1830.

PART I.
ORIGINAL CORRESPONDENCE.

ART. I. *Notes and Reflections made during a Tour through Part of France and Germany, in the Autumn of the Year 1828.* By the CONDUCTOR.

(Continued from p. 12.)

OF the *public gardens* of Paris, the first, in point of importance, because a garden of instruction as well as of entertainment, is the Jardin des Plantes. The Garden of Alfort belongs to the same class, but is of a very inferior order. The Gardens of the Luxembourg and of the Tuilleries are public gardens of recreation; the Bois de Boulogne is a park of recreation; and the Garden of Sceaux, and some others that we shall enumerate, may be styled gardens of festivity.

The Jardin des Plantes dates its origin from the beginning of the seventeenth century; but, as a school of botany and vegetable culture, was made what it is by the late Professor Thouin, during the first years of the consulship. Speaking with reference only to what concerns plants and their culture, this garden is unquestionably the first establishment of the kind in Europe. We have in Britain several botanic gardens, but none maintained for the same objects as that of Paris. These objects are two: first, to collect useful or remarkable plants from every part of the world, and to distribute them to every part of France, and, as far as practicable, to every other country; and, secondly, to form a perpetual school of botany and vegetable culture.

We shall not describe this garden here, having done so in our *Encyclopædia of Gardening*; but, as English travellers are in

the habit of comparing it with Kew, with which it has scarcely one thing in common, and of giving the latter the preference because it has a more extensive collection of plants, we shall briefly point out the manner in which the avowed objects of the Paris garden are proposed to be obtained.

Plants are brought to the Paris garden from all countries, by a universal correspondence, by particular naturalists sent out at the expense of the nation, and by the general protection and favour of government to the objects of science and the pursuits of scientific men. Objects of natural history destined for the Paris garden, in whatever description of vessels they may arrive in a French port, pay no entrance duty, and they are mostly forwarded by government conveyances to Paris free of expense. Every warlike, exploring, or commercial expedition is accompanied by naturalists officially appointed or voluntarily admitted, to whom every facility is afforded in the objects of their pursuit. Plants received in the Paris garden are propagated without loss of time, and distributed, in the first place, to all the botanic gardens of France, of which there is at least one in the capital of every department; next, seeds or plants are sent to such of the colonies as it is supposed may profit most from them; and, lastly, they are sent to foreign correspondents, in proportion to similar favours received, or returns expected. The departmental botanic gardens propagate with all rapidity the plants received from the central garden, and distribute them among the eminent proprietors and cultivators of the department. This, at all events, is remarkably good in theory.

Botany is taught by the lectures, demonstrations, and herborisations of a professor, and illustrated by an exemplification of 124 orders of the Jussieuean system in living plants. A considerable number of these plants are necessarily exotic, and kept under glass during winter; but, in May, before the demonstrations begin, they are brought out in the pots, and sunk in the earth in their proper places in the systematic arrangement, with their names and the names of the orders to which they belong placed beside them.

The cultivation of vegetables, and all the different operations of agriculture and gardening, are taught by another professor, with assistants, and exemplified by different compartments in the garden. For instance, there is one compartment in which all the different operations on plants and on the soil are exemplified, from the different modes of preparing the soil for sowing or planting, through all the species and varieties of propagation, training, and pruning, even to hedge-growing and fence-making; another compartment contains

all the plants of field culture; another all the medicinal plants; another all the principal timber trees; another, as far as practicable, all the fruit trees. Specimens of the different implements are kept in one building, and of the principal soils, manures, and composts in an appropriate enclosure; and so on. The essence of the lectures, accompanied by figures of such of the implements and operations as admit of representation by lines, will be found in *Thouin's Cours de Culture et de Naturalisation des Végétaux*, by Oscar Leclerc, 3 vols. 8vo, with one quarto volume of plates; and a complete description of the garden is given in the well known work of Royer.

We have no public garden in Britain which makes any pretension to so many objects, and therefore we cannot estimate the merits of the Paris garden by a specific comparison. Kew has no more relation to it than the botanic garden of any private gentleman or university. But we may estimate the general merits of the Paris garden, as an institution, with reference to institutions of the same class in this country; and, in this view, its comparative comprehensiveness and utility at once claim for it a decided preference. The greatest national establishments of this kind in Europe, next to that in Paris, we suppose to be those of Berlin; but, as the gardening institution there is a public association, apart from the public botanic garden, a specific comparison cannot be made. At Florence there are a professorship of culture, and a garden of examples of operations and plants; but the latter is very limited and imperfect. At Madrid, as we have seen (see La Gasca, in Vols. I. II. III.), there was once an attempt at such a garden, but it was never rendered effective. In various parts of Germany and Italy there are professorships of culture, and in most of the botanic gardens there are departments for agricultural and horticultural plants; but we do not recollect one, in which all the operations on the soil and on living plants are illustrated by practical examples.

The inventor of this description of garden, as far as we have been able to learn, was the late Professor Andrew Thouin (see Biog., Vol. I. p. 226.), perhaps the most scientific practical gardener that has ever yet appeared: for physiological and chemical knowledge, we know of none in this country, either practical men or amateurs, who can be at all compared with him. In France the only man fit to succeed him was his nephew, Oscar Leclerc; but, as the situation is considered a kind of sinecure for veteran academicians, it was given first to M. Bosc, and on his death to M. Mirbel, both men of the greatest merit, and the former a cultivator.

The uses of all the different departments of this garden were explained to us, while walking through them with M. Thouin himself, in 1815: the whole was then in excellent order. In 1819 we again had the pleasure of walking through a part of the garden with the venerable professor, then very infirm; but he pointed out to us the culture of the sweet potato, gave us some seeds of a new wood-strawberry, and some letters of introduction for Italy. In comparing the garden in 1828 with what it was at these periods, we think it has lost rather than gained: several of the examples of operations were wanting, or out of repair; a good many blanks were left in the systematic arrangement; and, what displeased us most of all, the compartment of soils and manures, in which also the labours of digging, picking, trenching, hoeing, raking, &c., were practically taught to the students, was without a single example of a heap of dung, compost, or soil. We were told that these had been removed, partly because there was not enough of money allowed to keep up the garden, and partly because, being in the neighbourhood of the menageries, these heaps of earth and dung were considered unsightly—a false taste, in our opinion. We hope they will be restored; because, if the art of culture is to be taught at all, it ought to be taught completely in all its parts. The different hot-houses are in a state of neglect and decay, and the plants by no means worthy of comparison with those of the most indifferent British stove or green-house. The French gardeners, in general, have had too little experience in house culture to be able to compete with us in this department; and they have, besides, very indifferent houses, both in point of form and means of heating and ventilating. The nursery gardeners, and the growers of flowers and forced vegetables, equal if they do not excel us; because they have adopted the low Dutch pits, and houses with roofs entirely of glass. An English gardener, at first sight of the interior of the hot-houses in the Jardin des Plantes, and other similar hot-houses on the Continent, would say that the air was not kept sufficiently moist, because, if it were so, the plants would be more abundantly furnished with healthy foliage; but as all these houses have opaque roofs, and only glass in front, a little reflection will convince him, that to keep plants so circumstanced in a growing state through a long winter, would greatly disfigure them in point of shape, while, from deficiency of light, they would never form flower-buds. The Continental gardener, therefore, grows his plants in the summer season, and for the most part out of doors, in an open but sheltered situation, and only preserves them through the winter.

Would it be desirable to have such an institution as the *Jardin des Plantes* in this country? We do not think it would. We are sufficiently advanced in the arts of culture, have such an extensive intercourse with every other country, and have so many wealthy commercial establishments for effecting the reception and distribution of plants, and so many books which treat of their culture, that the interference of government is rendered unnecessary. In early stages of society there are many things that should be undertaken by governments, which they ought afterwards to cease doing, on the principle of lessening their own labour, and, consequently, lessening their expense to the governed. It was laudable and wise in our royal and papal ancestors to take learning, arts, and religion under their protection, and to establish colleges and academies; but these institutions, and the objects for which they were founded, now protect themselves, and therefore ought to be left to themselves. Government might probably be justified in establishing a *Jardin des Plantes*, and a professor of culture, in Australia, and at the Cape of Good Hope, but nothing of the kind is required of the government for Britain. Let associations of individuals establish such institutions if they please; but by no means let government have any thing to do with them.* While we state this as our opinion, we shall also state that in all colleges, universities, and other institutions for education, we should wish to see professorships of botany and culture, and botanic gardens combining, as far as practicable, all the features of the *Jardin des Plantes*. We should wish to see something of the art of culture always taught along with physiological and scientific botany. We have no wish to see, in every provincial botanic garden, examples of the hundreds of varieties of grafting and pruning, and all the forms of hedges, ditches, fences, and implements, that are in the *Jardin des Plantes*: but we should certainly wish to see, in every botanic garden, specimens of all the principal domestic and medical plants; a few of the different species of grafting, pruning, and training; and some of the other modes of propagating; because we would wish every human being to know how to propagate

* We know that it was the intention, some years ago, to try to get government to take the Chiswick garden off the Horticultural Society's hands; and we have heard it asserted that, if the Earl of Liverpool had lived, something of this sort would have been done. We hope, for the honour of His Lordship's memory, that this report is not true. It would argue the greatest imbecility in the ministry of a country so situated as Britain now is, to have any thing to do with an institution which, even if it were perfect in its kind, may truly be called, in a national point of view, a trumpery concern.

and cultivate vegetables, and to acquire a taste for this and for building houses. We would therefore have all these plants and examples in the gardens of our Parochial Institutions; and we would teach, both theoretically and practically, the art of culture to every boy, as well as the art of building arches and erecting various descriptions of structures with miniature bricks. (*Des Etablissements, &c.*, p. 52.) Every girl, in like manner, we would instruct in the management of cows and poultry, and in the whole duties of a farmer's wife. We would teach these things to all, without exception of rank; and the good which we should expect to result from them would be, such a desire for the possession and use of a house and garden, as would lead to conduct calculated to obtain them, either by industry and economy in the country of our birth, or by emigration to some other. The same taste for the quiet enjoyments of a country life would enhance the difficulties of going to war; and, at the same time, coupled with our plan of teaching all boys the military exercises, the different modes of self-defence, as well as the higher branches of military science (*Des Etablissements, &c.*, p. 51.), would excite double vigilance in personal or national defence when either became necessary.

Practical men may smile at the idea of teaching at school the labours of the garden and the field; they can only smile at the idea of teaching what they already know, or what, if they did not know, they think they could inform themselves of by observing what is going on every where around them. But the same objections to our proposal may be applied to the study of languages; and because every one can speak, it may be said, boys need not be taught grammar. It may be asked, also, why teach the art of vegetable culture universally, any more than several other arts, the exercise of which is equally essential in civilised society? Why not make every man a tailor and a shoemaker, as well as a cultivator and a warrior? Do so too, if there are time and capacity: but make sure of the latter arts, because they are more universal; because they are more favourable to peace; likely to be much more useful to emigrants, of whom, it appears probable, there will require to be a great many from this country for ages to come; and, finally, because society must, in no very distant age, settle down into something like a more general distribution of territorial property than what now exists. We have not the slightest wish to force forward this or any state of things by laws; much less would we advocate any thing not founded on justice, honour, and honesty: we trust entirely to the love of liberty and independence inherent in every commercial community, and the spread of a high degree of education among all

ranks; firmly convinced, that whatever these produce will be right, and that they can only produce what shall be good for the whole.

The museum of natural history and the menagery connected with this garden, and forming with it parts of one grand scientific whole, ought not to pass unnoticed. The museum is known to be the richest in the world in objects of natural history, and to be open and free to all persons, without exception, on certain days in every week. The menagery, as well as the different departments of the garden, is arranged in compartments, enclosed by light open fences, and surrounded by elegant highly kept walks; and, as these walks are open to the public every day in the year, they form a perpetual source of interest and enjoyment to natives and strangers of all ranks. The taste and variety displayed in the buildings containing the different animals, the beauty of the scattered exotic trees and shrubs, the movements of some of the animals, and the singularity of form, of colour, or of sound, of the others, render this place to the citizen and his family a paradise of wonder and delight. The influence which these exhibitions must have on the minds and feelings of a people to whom they are accessible, is, doubtless, very considerable. The most indifferent cannot see so great a variety of natural objects without having his views of nature enlarged and his mind expanded. If this is the case with respect to the museum, it is still more so in the menagery, where to forms and colours are added life, motion, and character. We have little doubt that the Parisian populace owe a part of their urbanity and politeness to their familiarity, in the public and royal institutions and gardens, with the rarest and finest productions of nature and art. We think we can see something of the same kind producing in the London populace, in consequence of their greater familiarity, within the last fifteen years, with the collection in the British Museum, and from their comparatively frequent habit of viewing various exhibitions of pictures, sculpture, and other objects. That there is a powerful taste for such exhibitions is proved by the immense number of persons who, during the last two years, have visited the gardens of the Zoological Society.

The Establishment of Alfort is a sort of agricultural college, in which are a number of professors paid by government. Since the return of the Bourbons it has been neglected, the professors have not been paid, and the large agricultural garden is in a deplorable state of neglect. This garden contains the remains of what has been a tolerably complete arboretum; a more extensive collection of hedge plants and specimens of

live hedges than that of the Jardin des Plantes; a grass ground containing patches of several yards square of all the principal grasses, including the cultivated corns; and another compartment for large patches of the leguminous plants in field culture, the oil plants, plants for clothing, cordage, dyeing, &c. Most of these are now run wild, and a great many of the examples of annual plants are wanting. There were at one time here, we were told, upwards of 150 sorts of potatoes, and a great many fruit trees: at present several acres are under a potato crop as a matter of profit. Close to the college, which is a large building, and was formerly, if we do not mistake, a convent, is a small systematic botanic garden, representing perhaps fifty of the Jussieuean orders. The gardener, an intelligent man for the country, and exceedingly attentive to strangers, lamented to us his situation in being obliged to see the plants which he had reared and loved, neglected and going to ruin. He is not allowed the least assistance, and to keep what is under his charge in good order would require at least two men. He pointed out to us a specimen of *Juglans olivæformis*, of forty years' growth, and from 40 to 50 ft. high, which bears abundantly every year; a *Gleditschia monosperma*, 40 ft. high, with its long broad pods; and a good-sized tree (30 ft.) of *Pinus halepensis*.

(To be continued.)

ART. II. *Notice of the Prestwich Botanical Society, and the Bury Botanical and Entomological Society, preceded by some Critical Remarks on a Passage in the Account of the Conductor's Tour in France.* By Mr. J. HORSEFIELD, Weaver, Pilkington, near Manchester.

Sir,

I HAVE long been desirous of sending you some account of the botanical societies that exist in this part of the country, but natural timidity and want of education, together, have hitherto prevented me from acting according to my desire; but you have at length *vexed* me to the use of my pen. Fond of botany and horticultural pursuits, and placed by Miss-Fortune in such circumstances that I cannot practise half enough of either, I make up the deficiency in some measure by reading; consequently, the contents of your Gardener's Magazine are to me highly interesting: but it may be necessary here to remark, that sometimes several weeks elapse between the publication of a Number and the time of my perusing it,

which circumstance will account for the lateness of this communication. In your Notes and Reflections during a Tour through France (Vol. V. p. 123.), in comparing the state of the lower orders of the people in France with those of England, you remark, "for ignorance, and the necessity of continual hard labour, both of parents and children, seldom allow the English mechanics to have more than two ideas, getting and expending;" and further, in your desire for the future welfare of the French cotton manufacturers, you express a hope that they will be prevented "from falling into that dreadful state of degradation which is, or was till lately, characteristic of the Lancashire operative manufacturer." In this last assertion I am particularly interested. What your ideas of our "dreadful state of degradation" may be, I cannot positively say: had you used the word destitution instead of degradation, you would have been more correct*, at least as far as my observation extends; and, unhappily for me, that observation is practically confined to a part of this county, being a Lancashire operative manufacturer myself. If to be half-employed, half-paid, and half-fed, constitute "dreadful degradation," I can sincerely assure you we are *now* dreadfully degraded indeed.

As for our "ignorance," I don't think we are more ignorant than any other class of His Majesty's subjects. The intricate paths of science are seldom sought for by any man, whatever his station in life may be, except he thinks that they will lead him to some post of pecuniary gratification; and even amongst *us* you might find some instances of devotedness to literature and science. It is no uncommon circumstance in this neighbourhood for a gardener to ask a weaver the names of plants; botany being a favourite pursuit amongst us, and botanical meetings frequent and well attended. But I will give you an account of some of our societies.

In 1820, a society, entitled the "Prestwich Botanical Society," was formed, which holds its meetings on the second Monday in each month, for the purpose of raising a fund (towards which each member pays 6*d.* a month) for the exhibition of specimens of plants, and for the exchange of books. The members have never been numerous, always varying between twelve and twenty, but seem much attached to the subject. They possess about 40*l.* worth of books, without ever

* We agree that it would; and are sorry to have used such an ungracious epithet. At the time of writing we had in our mind's eye the condition of the agricultural labourer, ignorant, starved, and reduced to poaching and thieving, with no prospect but the poor-house or a prison. Whatever we have said or may say on this subject, our object is the good of the parties; not to hurt their feelings. — *Cond.*

having received a shilling by way of donation. Their books consist at present of many botanical works, comprising eleven volumes of Smith and Sowerby's *English Botany*, Green's *Universal Herbal*, Smith's *English Flora*, Withering's *Arrangement*, *Gardener's Magazine*, and they are beginning to purchase the *Encyclopædia of Plants*.

In the town of Bury, a few miles distant, another society exists, called the "Bury Botanical Society," only differing from the former inasmuch as it unites entomology with botany. The list of subscribers to this society contains about fifty names, comprising several highly talented individuals, tradesmen, mechanics, and a few labouring gardeners. Their library contains many popular works on botany and gardening, amongst which are, the *Gardener's Magazine*, *Encyclopædia of Gardening*, many volumes of the *Botanical Magazine*, *Hortus Kewensis*, &c., with several entomological publications. The meetings of this society are held on the first Wednesday in each month, for the same purposes as the preceding.

The method pursued at these meetings is this: — Each member brings what specimens of plants or flowers he chooses, which are all laid on the table, without order or arrangement, as nature exhibits them in a wild state: after the members are assembled and seated, the president takes a specimen from off the table, and gives it to the man on his left hand, telling him, at the same time, its generic and specific name; this person must pass it on to the next in the same manner, till it has gone round the room; and in this manner all the specimens produced, amounting sometimes to some hundreds, are handed round the company, and are then selected for the purpose of enriching a herbarium, or decorating a room. One person is president of both these societies, at least as far as the nomenclature of plants is concerned, a poor cotton weaver, or, if you please, a "degraded" Lancashire operative manufacturer.

We have several other societies of a description similar to the above, established in various parts of the country, which have, besides their particular meetings, general ones, at which any person may attend who feels inclined so to do. By these means the indigenous botany (with the exception of some of the most obscure tribes of *Cryptogamia*) of this neighbourhood is very well known; and, if our gardeners were as much inclined to assist in disseminating botanical knowledge as some of our mechanics are, our exotic botany would be equally so; but such an inclination exists only in a very few of them.

But I think I have written sufficient for one letter at present. What use you will make of this communication I know

not; I hardly think you will publish it, but you must use your own discretion. Whether you publish, mutilate, or destroy it, is but of little consequence to

Your very humble servant,

J. HORSEFIELD.

Pilkington, near Manchester, December 14. 1829.

WE shall be happy to receive from Mr. Horsefield accounts of the other societies to which he alludes, and are much gratified at the proof he has here given of the taste for, and knowledge of, botany, which exist among the weavers of Lancashire. We are still more gratified at the evidences which some of these operative manufacturers have afforded, at recent public meetings, of sound political knowledge and good moral conduct, and of their determination to persevere in their endeavours to obtain political reform. Whatever be the kind of knowledge which a man may find it necessary or desirable to obtain for his own private use or gratification, he ought always to join with it a knowledge of politics and political economy; in order that he may clearly understand his rights as a man and a citizen, the precise point to which his country has attained in civilisation and happiness with reference to other countries, and the political and moral improvement of which it may be susceptible. Having ascertained these things, it then becomes his duty to cooperate with his fellow-men, in every lawful, honest, and peaceable means, in bettering their condition. — *Cond.*

ART. III. *Vegetable Pathology.* By a WARWICKSHIRE
NATURALIST.

NATURAL History is a study no less amusing than instructive. It extends the bounds of knowledge into regions which, though long in sight, yet have remained unexplored and neglected; and, while we have been seeking for objects of interest in distant climes, we have overlooked or despised the wonders of creation within our reach at home.

The eager search after truth, in these days of restless enquiry, has redeemed the supineness of former times; and that heavenly fruit, which has so long hung on the tree of knowledge within the reach of the philosopher only, has been freely plucked by all who chose to gather it. Nature has been wooed in her thousand forms, and pursued to her thousand recesses; and the path which led to her retreat,

hitherto impeded by mystical symbols, or rendered inaccessible by learned languages, has been cleared and levelled for the convenience of every traveller.

The discoveries of our most celebrated naturalists have thus become the text-book of all ages and all stations; and the earth, the air, and the sea, instead of yielding their productions merely to gratify the vanity or luxury of man, have afforded a more noble repast to his intellectual appetite.

Among the various branches of natural history which have long occupied the attention of mankind, none has been so generally followed as botany. The attraction of flowers and fruits, beautiful by their colours, tastes, and smell; the delight of rearing a living thing, which grows under our eye, and developes itself from a shapeless mass to one of extreme beauty and loveliness; whose life is free from pain, and whose death seals the promise of its reappearance; the facility and cheapness of procuring sustenance for its support; and, above all, the absence of all unnecessary torture and disgusting experiments, have long made botany the favourite study of both sexes; and, consequently, there is no science more generally known, and so far advanced to perfection. The physiology of the vegetable kingdom has thus become a beaten track, open to all, even to the lowest capacities; and, though new discoveries are daily arresting the steps of the traveller, and some unnoticed plant or flower is gathered, to adorn, instruct, or benefit mankind, yet the circle of discovery is more circumscribed in this than in any other branch of science:

There is no department, however, in the vegetable kingdom, which has been passed over with so much neglect as the diseases of plants, and their *medical treatment*, and which, if pursued philosophically, would explain many phenomena at present inexplicable. I am aware that physiologists have not passed over in silence many diseases to which *particular plants* are liable, and have described many remedies by which those diseases may be alleviated or removed; and I am aware, also, that the practical, as well as scientific, horticulturist, the rearer of the cabbage and of the pine, have endeavoured to obviate the evils in their respective avocations. But the scientific treatment of the diseases of plants, by remedies adapted to their construction, *analogous to the diseases of animals* which affect them, has passed without notice or enquiry. This is the more extraordinary, because the analogy of animal and vegetable life and formation; the growth, maturity, and decay of each; the necessity of food, light, and air; the circulation of the blood and the sap; the distinction of sexes; the effect of climate, of cold and of heat; with an infinite

variety of other circumstances, equally affecting the animal and vegetable world, and drawing their analogy still closer the more they are investigated, appear to point to similar treatment; and thus, if remedies were applied to the diseases of the vegetable world, occasioned by any of these interruptions to their natural growth, health, and perfection, and arising from similar causes to those which affect the animal kingdom, the pathology of vegetables might afford a *materia medica* for horticultural practice.

In order that I may not be misunderstood, and subject myself undeservedly to the sneers of the ignorant and incredulous, I will shortly point out in what the animal and vegetable world so essentially agree; and in another letter show how very much the diseases of both resemble one another in their origin and effect, and how a similar treatment might be attended with successful results.

Nature has been divided into three kingdoms, animal, vegetable, and mineral. Animals are so called from *anima*, the breath. Vegetables, not having breath, but merely growth, are so called from *vigeo*, to grow. Of animals, man holds a distinct and preeminent superiority, chiefly, if not solely, occasioned by his being distinguished from the brute creation by the soul, by whose agency all his actions are governed, and the material part of him refined and purified. In what, then, consists the difference between man, animals, and vegetables? Principally in this: man is composed of *soul*, *mind*, and *body*; an animal, of *mind* and *body*; and a vegetable, of *body only*. If this distinction be kept in view, we shall see that vegetables differ no more from animals, than animals do from man; and that the highest order of vegetables is, if any thing, nearer to the lowest order of animals, both in formation and functions, than the highest order of animals is to man in his wild and savage state. In almost every thing where the influence of mind takes no part, and which is conducted without its aid, the animal and vegetable kingdom resemble each other in a most extraordinary degree. Each are endued with instinct, by which they are compelled to involuntary actions adapted to their respective natures, wants, and dispositions: the animal, for its self-preservation, for the continuance of its species, and for the protection and provision of its young; the vegetable, for the perfecting of its seed, for its sustenance by its roots, and for the purpose of deriving the necessary benefit of light and moisture. If any impediment stands in the way of these involuntary actions, they both surmount the obstacle by powers inherent and unfelt by them; and it is only when the powers of the brain are called into action, ope-

rated upon by external objects, that the comparison ceases. That the mind and soul are two distinct qualities, there can be no doubt: for the soul remains with the body when the mind is gone; and the brute creation have many of the powers of the mind without possessing the soul. I may be asked, what do I call *mind*? To this I answer, that the mind is *that medullary part of man and animals called the brain, to which the senses convey ideas by nerves terminating thereon*. In man, possessed of that divine part called the soul, the brain receives impressions through the senses; and, having the power of retaining, improving, and enlarging the ideas impressed upon it, is acted on by the soul, to enable it to choose good from evil, to give his actions that moral beauty which is called conscience. In animals, though similar impressions are made upon the brain by the nerves through the senses, yet, having no soul, they have no power to distinguish good from evil, and thus all their actions must be the result of impressions made upon them by external objects. Instinct supplies to them the place of the moral choice of man; and, where that choice would be necessary for their guidance, they involuntarily act, like vegetables, without any knowledge or consciousness of what they are doing. A dog, and other animals, may be taught to do many things, which in man would be the result of a moral choice; but they make those distinctions not by the power of any moral influence, but solely from the impressions made upon their brain, whether caused by the recollection of past punishment, or by the fear of future pain; and unless from long habit they should have forgotten their natural propensities, they would, when those impressions were worn out, return to their original nature. Now, the seat of all sensation is the brain; and however we refer any pain or pleasure in any part of our person to the part affected, yet, the nerves, conducting that sensation to the brain, the brain is the place alone affected. This is too well known and acknowledged to require illustration; but I may mention the practice of nerving a horse's foot to cure him of lameness, and the use of the tourniquet to deaden the pain of amputation. I have heard, from unquestionable authority, that persons who have lost a limb in distant countries have frequently imagined pain in that very limb, but which the remains of the divided nerves have conveyed to the brain, and thus caused this illusion. If, then, the seat of sensation is the brain, it follows, of course, that where there is no brain there can be no sensation; and therefore the senses would in such case be unnecessary. Vegetables, therefore, can have no sensation, nor any power of action originating from themselves; and it follows, that all

those qualities and attributes of animals, resulting from brain or mind, would be and are to them totally impotent. The faculties of seeing, hearing, smelling, tasting, and feeling (unless where such feeling depends upon mechanism), and which convey to animals all those powers which influence them, would be, even if vegetables had them, perfectly useless. They have no medullary substance to receive them; and therefore they would have the same effect on them as they have on man or beast whose brains are affected by disease, inebriation, or violence. They have indeed some qualities which appear to partake of sensation, such as spontaneous motion to the light or to an upright position; shrinking from the touch, as in the sensitive plant, or closing their petals on the fly, like the *Dionæa muscipula*: but these actions are the result of a mechanical process, quite distinct from voluntary action; and resemble the instinct of animals given them for their preservation and defence. The vegetable and the animal, in those cases where the mind or brain is uninfluenced, are wonderfully governed by similar laws, are obnoxious to similar evils, influenced by similar causes, and display similar effects.

Life. — The first and most essential bond of union and resemblance between the animal and vegetable world is the vital principle, called *life*. In what that principle consists, where situated, and whence derived, have hitherto eluded the researches of all. That it is distinct from the soul and mind is clear, because it is as necessary to the vegetable, which has neither, as it is to man, who is endued with both. It lies equally dormant in the egg of the bird, as in the germ of the vegetable, and, till called into action at a certain stage in the progress of their respective formations, the embryo lies apparently without it: but, as soon as it is roused from its inactivity, it accompanies each during their infancy, maturity, and decay; and when old age or accidental causes have completed the term of their existence, it equally resigns the body to the well-known consequences of dissolution. In animals, as well as vegetables, there are some mortal parts which, if wounded, hasten its termination, or render them feeble and sickly; and there are others which bear the effects of injury without being materially affected. The same terms, expressive of life and death, health and disease, vigour and weakness, are applied to both; and, when their qualities render them fit for food, they both supply to man his necessities or his luxuries.

Structure and Functions. — The next affinity between the animal and vegetable world is in their *structure* and *functions*. The

trunk or body is in both their main support; the limbs and arms of each; the head or crown; the hair or leaves; both porous, and exuding a sensible perspiration. The feet or roots, which keep their bodies upright; the epidermis and cuticle, which varies, from the delicate film that covers the eye of the animal and the parts of a flower, to the hard skin of the foot and the equally hard bark of the oak; the cellular membrane, under the cuticle of each, which gives to each its colour, and which causes the white of the European, and the black of the African; the flesh or wood; the heart (*cor*), or the pith (*core*); the blood and the sap; the veins through which the blood flows, and those through which the sap is propelled; the perspiration of both; and, lastly, that peculiar construction, which adapts each to live in the earth, or in the water, or renders them both amphibious. All these analogies, and many others, show the resemblance of each in their *material* parts, uninfluenced by that medullary part which I denominated the *mind*, and in which consists the chief distinction between them.

Food. — The analogy is still more strongly marked, when we consider the necessity there is for each, not only of having food for nourishment, but of having that food wholesome and appropriate. Vegetables as well as animals are enfeebled by improper nourishment; and as animals, having mind, can refuse whatever is improper, so vegetables, having no power of choosing, must take whatever we give them. Here again is an important distinction between the two, arising from the passive nature of the one, and the voluntary action of the other. Every practical agriculturist must daily witness the effect on vegetables, grain, and plants, produced by soils more or less adapted to their different natures, or powers of secretion; and how, as in animals, so in vegetables, their vigour, growth, and even existence, depend on the quality and quantity of their food. The knowledge of soils and manures, which are the diet of plants, is essentially necessary to the farmer and gardener; as it is from this food that the fibres of all roots collect what is necessary for the support of the parent stem. The veins of vegetables are the sap-vessels, as the veins of animals are the blood-vessels, to convey their nourishment to every part of the tree; and as the chyle poured into the veins, and mixed with the blood, is, through the medium of the heart; so the nutrimental juices of plants, taken up from the earth, are carried by sap-vessels into the leaves, for similar purposes. Thus, the improved sap, like the arterial blood, proceeds to nourish and invigorate the whole frame; and the secretions which each is able to form, from the sub-

stances they each live upon, produce fat in the one, and gum or sugar in the other.

Sexes. — As in animals the two sexes are distinct, so in vegetables they are equally marked and cognizable. The female blossom, or that part of it which is to perfect seed, would be barren without the presence of the male; and the necessity of the pollen coming in contact with the female stigma before the seed can be perfected, is too well substantiated to require further illustration here. In blossoms which have no male, the winds, insects, and even the horticulturist himself, must promote the hymeneal union. The entomologist, as well as the botanist, in tracing the wonderful provisions of nature for the perpetuation of the different species in each of their respective pursuits, can easily appreciate the truth of their wonderful analogy.

Seeds. — The growth and preservation of vegetable life is promoted and maintained, as in animals, by the plentiful and regular motion of their fluids. Thus, when the seed has been perfected by the pollen, and deposited in the womb of the earth, and has swelled by the moisture which its vessels absorb, and which stimulate its vital principle, the embryo contained in it derives its nourishment by means so strictly analogous to the infant animal, that the same terms may be applied to either. The mother of the animal supplies it with appropriate nourishment, so the vegetable has a similar fluid, provided for its support; and the *albumen* or white, and the *vitellus* or yolk, which nourish the tender plant till it can obtain its appropriate food by its own powers and exertions, are in no way different from the blood and juices of the parent animal till the birth of its young, and the milk which sustains it afterwards. Each develops itself, and when at maturity becomes something totally different from its original appearance, either the giant oak of the forest, or the painted beauty of the garden; and there has taken place no greater change, from the stage when the vital principle was first called into action, than what has taken place in the tadpole that swims in the water, or in the butterfly which flies in the air.

Training. — In animals as well as vegetables, in their wild and uncultivated state, nature has been left to range free and uncontrolled; and the same grandeur of character marks each in their respective attributes: but, when restrained by man, and domesticated for his use, or cultivated for his food or pleasure, then the education of the one and the training of the other become equally necessary. The young plant, if left to itself, would, like the animal, be injured by the luxuriance and rankness of its growth, and be rendered useless to man if

unrestrained and undirected by his skill and guidance. His art is to eradicate the evil habits of the one, and to prevent or remedy the bad propensities of the other. The shape, growth, and symmetry of both must be scrupulously attended to; the wildness of their natures controlled; and the most efficient means applied, to render them productive. The tender sapling must be trained with as much address and attention, to render it profitable for timber, or beneficial for food, as the animal must be educated for the purposes for which he is designed. In either case, neglect would be fatal; and constant attention can alone render either profitable.

To enumerate the various other analogies between the vegetable and animal kingdom would swell this letter to a volume. The effects of cold and heat upon both, either in too great or too little a degree; excessive moisture or dryness; too much or too little exposure to air; the difference of climates, of food, or of soils; pestiferous air, fogs, smoke, and vapours; not omitting the accidents to which each are liable, and the effects from wounds and other injuries; these, and many others, must strike the most superficial observer as common to both. Nor ought I to omit the diseases which are common to both; such as tumours, canker, distortions, gout, measles, carbuncles, ulcers, fungi, gangrenes, and excessive bleeding: but, as I intend to show, in my next letter, that the diseases in both are occasioned by the same causes, and produce the same effects; so shall I then demonstrate that, by keeping in view the distinction between the animal and vegetable world, as consisting in the absence of that medullary substance called *mind*, we may palliate or cure most of the diseases of plants by remedies analogous to those applied to the material or vegetable part of animals.

A. W. N.

ART. IV. *On preserving tender Plants in Winter by means of the Temperature of Spring Water.* By Mr. A. GORRIE, F.H.S.

Sir,

THERE is a curious coincidence between the annual mean temperature in the open air, and the annual mean temperature of water in a deep spring well at the same place. In a spring well of that description at Annat Gardens, I find the temperature of the water to indicate from 46° to 47° in the winter months, unaffected in the least by atmospheric temperature, however low that may be. As spring wells are frequently to be met with, and are always desirable appendages

to a farm-stead or cottage, it occurred to me that many plants, useful to the cottager, or amusing to the farmer's wife or daughters, might be easily preserved in the winter months, in the coldest regions of Scotland, by that class of people whose finances would not enable them to erect more costly structures for the purpose. To ascertain how far this theory was correct, I placed a small frame over the well on a floor of deal 2 in. wide by 1 in. thick, and 1½ in. between each spar, to admit of the heat rising in the frame from the water. Knowing that glass would not be purchased by that class whose advantage I had in view, I covered the sash with cotton wrapper at 4d. per yard, and in the frame I placed pots of cauliflowers, lettuce, pelargoniums of different sorts, *Chrysanthemum indicum*, *Primula sinensis*, &c. The circumambient air is generally, as might be supposed, nearly saturated with moisture; and, consequently, fresh air has to be admitted as frequently as possible. The vegetables and plants continue fresh, and the *Pelargonium odoratissimum* has been all along in flower; and I am fully convinced that, where such spring can be rendered available, by means of a cut 2 ft. deep, 2 ft. wide, with 2 or 3-inch offsets at each side of the rill to support the ends of boxes 9 in. wide and 4 or 5 in. deep, placed within 2 in. of each other over the rill, into which boxes lettuce and cauliflower plants, chiccory, &c., might be planted, the whole to be covered over with hoops and loose matting to prevent the descent of what meteorologists call frigorific pulsation, a winter conservatory might be easily constructed on one spring, for the use of a whole village. As the rill brings a continual flow of water at the temperature of 46° or 47°, the earth in the box will always be kept considerably above the freezing point in the coldest nights. It may also be useful for nurserymen and others for preserving cauliflower plants, which in this country are always scarce and high-priced in the spring months. A glass cover, when it can be obtained, will be of infinite advantage, and will admit of a greater variety of tender plants for preservation.

I am, Sir, &c.

Annat Gardens, February 4. 1830.

A. GORRIE.

ART. V. *Method of destroying the A'carus or Red Spider, Slugs, and other Insects on Plants, without injuring the Leaves.* By N. T.

Sir,

As the time approaches in which insects begin to make their appearance on hot-house and green-house plants, you

perhaps will not object to insert another recipe for destroying them, in addition to the many which have already appeared in the Gardener's Magazine. In all the recipes for destroying *A'cari* which I have seen, sulphur is an ingredient; this, in its crude state, will not unite with the liquids used for that purpose, and therefore it can have little or no effect, except when applied as a wash on the heated flues of a house. In order to make it unite with soapsuds, tobacco water, and other liquids usually made use of for destroying insects, it must be converted into a sulphuret, by boiling it with lime or an alkaline salt, as in the following mixture, which expeditiously and effectually destroys the red spider, by merely immersing the plant, or part infested, in the mixture: —

Common soft soap half an ounce, sulphuret of lime * one ounce by measure (or two table spoonfuls), soft water (hot) one ale quart. The soap and sulphuret to be first well mixed with an iron or wooden spoon, in the same manner as a mixture of egg and oil is made for a salad; the hot water is then to be added by degrees, stirring the mixture well with a painter's brush, as in making a lather, by which means a uniform fluid will be obtained, like whey, without any sediment, which may be used as soon as it is cool enough to bear the hand in it.

This mixture will destroy every insect usually found in the green-house, by mere immersion, except the *Coccus*, or scaly insect, which adheres so closely to the stem, or under side of the leaf, that the mixture cannot reach its vulnerable parts; therefore, in this case, the mixture must be applied with a brush that will dislodge the insect. If the mixture be put into a wooden bowl, or any other shallow vessel, small plants in pots, and the leaves and branches of larger ones, and of fruit trees, may be easily immersed in it by pressing them down with the hand.

The above mixture will not destroy the black *A'phides* of the cherry tree, nor the green *A'phides* of the plum tree, by immersing the leaves and branches in it; there being an oiliness on these insects which prevents its adhering to them. It will destroy them by applying it with a brush; but this is too tedious a process. It has been recommended, by writers on horticulture, to wash these and other fruit trees against

* The sulphuret of lime is easily made in the following manner: — Take of flour of sulphur one ounce; fresh lime, finely sifted, two ounces; soft water a quart; boil the mixture in an iron vessel about a quarter of an hour, frequently stirring it after it begins to boil; let it stand to settle, and pour off the clear liquor. If it is not used on the same day, it must be put into a bottle filled with it, and be well corked; for, if it be exposed to the air, it will soon attract oxygen, and will then curdle the soap, and smother the plants with a white substance, which is not easily washed off.

walls, before the leaves and buds appear, with mixtures which cannot be safely applied after; for which purpose the above mixture, with the addition of spirits of turpentine, is likely to succeed as well as any other, or better: but I have not yet had an opportunity of giving it a trial. Half an ounce, by measure, of spirits of turpentine being first well mixed with the soap, and the sulphuret and water added as before; or the wash may be made stronger, by adding twice the quantity of each ingredient to the same quantity of water.

For destroying slugs and worms there is no recipe so simple, attended with so little trouble, and, when properly applied, so effectual, as common lime-water. The plants on which the slugs are found must be watered with it twice at least, at an interval of three or four minutes. If you place three or four slugs on the ground, and pour lime-water on them from a watering-pan, you will soon perceive them throwing off a kind of slough, and after that crawling away; but if you sprinkle them again with the lime-water, they will not be able to throw off another slough, and soon die after the second operation. When a person has therefore watered as many plants as takes up the time of three or four minutes, he must turn back to the place where he began, and water them again.

Lime-water, for this purpose, may be easily made so as to be always ready. Into a trough, containing about fifty-five gallons of water, throw in two or three shovelfuls of lime, stir it up three or four times on that day, and the next day the liquor is clear and fit for use, and will continue to answer the purpose for some time, without adding any fresh lime, by stirring it up again before it is used, and letting it settle. If the lime-water be of sufficient strength, it will destroy the large grey snail with twice watering, and all worms that are out of the ground at the time of watering, and it will not injure the most tender plant when used in a clear state.

I am, Sir, &c.

February, 1830.

N. T.

ART. VI. *On the Birch Rind of the American Indians, and the Uses to which it might be applied in Gardening.* In a Letter from Mr. HAWTHORN, of the Honourable Hudson's Bay Company, to Mr. Baillie of Dropmore Gardens; with a Note by Mr. BAILLIE.

Sir,

HAVING some time ago spoken to you on the subject of birch rind, and suggested its application in horticultural prac-

tice, I venture in a simple manner to relate what I have witnessed with regard to the usefulness of this rind, and in my humble opinion the many ways in which it might be applied in our gardens.

The settlements of the Hudson's Bay Company are supplied with this rind by the Indians. The Europeans never venture to peel it from the tree, for in this process much skill and ingenuity must be displayed, otherwise the trees soon become weak, and in a few years perish.

It is part of the Indian's study (unless when signals are made), and particularly of the inland tribes, to watch with care the growth of this beautiful tree, the height of which may be judged by the circumference, as the first-rate trees measure from 18 to 20 ft. round. The rind, on an average, is half an inch thick, and this is reduced in a most scientific and easy manner by a people whom we are accustomed to call savages. They begin by separating the outside rough and knotty parts from the more delicate, which, when prepared, they use for tentings or tent coverings, small and large baskets, and various other utensils. The rind next the outer bark is principally used for large and small canoes: the latter will carry 20 cwt. They also construct measures of it, which will hold from one to two bushels, and are exceedingly light and durable. But as that part which is used as tenting appears to me of most importance to the horticulturist, I will endeavour to explain how the tenting is formed, and its use amongst the Indians, and leave it to the decision of the amateur and gardener how far it might be useful in our gardens. I have frequently seen the Indian, his wife and children, forming this covering, which generally consists of four lengths, each length 12 ft., and the width 4 ft. The making is simple, but no European was ever known to me that could finish off one to answer the purposes with the readiness and nicety of the natives. The women sew the lengths together with roots which the children procure in the woods: these undergo the process of barking, cleaning, and dividing. The men frame each separate length at both ends, so that any convenient length or breadth might be obtained. The utility of the rind tents is acknowledged by the hunter and traveller of North America. They are used throughout the year; but during the hot months of June, July, and August they are found particularly comfortable, and are easily removed from place to place. The rain may descend in torrents, but all beneath are safe from the storm.

I have seen an Indian tent forming a circle of 60 ft., and 10 ft. high, covered in the short space of half an hour; so that flower beds containing choice roots or plants might thus be

defended from frost and heavy rains, particularly the latter, which do so much injury to our half hardy shrubs and trees. There are many other purposes in gardening to which this rind might be applied that will readily suggest themselves to practical men.

My motive in bringing this article into notice is to serve the public, trusting that it will one day or other become a national benefit.

I am, Sir, &c.

HAMLET HALSAY HAWTHORN.

Mr. Baillie, Dropmore Gardens.

Sir,

HAVING mentioned this article to several of my friends and acquaintances, they, as well as myself, were of opinion that the rind might be highly useful in horticultural practice, and applied with advantage in a great many ways not enumerated in the above communication. From many that suggest themselves the following are abstracted: —

1st, As a durable substitute for the portable marquees in use in the pleasure-grounds of British gardens; the materials of which, as at present constructed, being inadequate to the purpose to which they are applied, viz. to repel heavy rains and intense sunshine. These tentings may also demand the particular attention of the florist, as affording, in my opinion, excellent materials for protecting tulip beds from heavy rains in winter, by rolling them up and down, as circumstances might require. To stages of carnations, auriculas, &c., they might be applied with advantage either for shade or shelter.

2dly, Ranges of pine and melon pits and frames might be safely defended from rain and frost by a roll of this kind, as also pots of alpine and other plants that suffer more from wet than cold during our winter months.

3dly, Portable copings for garden walls might also be constructed of this article, which would defend peach and apricot blossoms from rain and spring frost. This rind might also prove a good substitute for the wicker protectors now in use for half-hardy trees and shrubs. In the kitchen-garden its utility is also apparent. Beds of such vegetables as are readily injured by frost, by being previously arranged and planted so as to admit of two rolls of this kind, of 4 ft. wide and of any given length, being run along a few hazel or other rods arched across them; rows of early peas and beans; beds of cauliflower, broccoli, lettuce, potatoes, &c., might be readily and securely protected in this way; and a few square yards of this rind, placed in a favourable quarter of the kitchen-garden, would assist in ripening abundance of tomatoes for a large

family, and obviate the pernicious practice of planting them near choice fruit trees, &c.

In order to ascertain whether this birch rind could be obtained through means of the Hudson's Bay Company, and, if attainable, the price per yard or cwt., so as to warrant its application to the purposes above stated; and whether its durability would render it superior to the various coverings now in use; an application was made to the governor of the above company, by Mr. Hawthorn, for a sample of this rind, before the sailing of the company's ships for the Bay last season; and, as portions of this rind are generally kept at the company's forts, a small quantity, for examination and trial, was confidently expected, and the return of the ships to Britain was looked for with much anxiety. The ships returned in November last, however, but without the much wished for sample of the birch rind. Our hopes are therefore completely frustrated for the present, but we still entertain the hope that, at no very distant period, enough may be obtained to make the experiment.

I am, Sir, yours, &c.

WILLIAM BAILLIE.

Dropmore Gardens, Dec. 22. 1829.

ART. VII. *Remarks on planting Trees and Shrubs in Masses of one Species.* By WILLIAM SPENCE, Esq. F.L.S.

Sir,

I now perform the half promise which I gave you, to lay before your readers the impression made on me by the various examples which I have seen, in the course of several extensive tours in Germany in the last three years, of the new plan of planting trees and shrubs in pleasure-grounds, in masses of the same species: premising, that neither my health nor acquaintance with the subject permits me to attempt to go deeply into it, and that I do not mean to enter into any controversy concerning it; my sole aim being to state my own feelings, without at all setting them up as a standard of taste, or even always pretending to give critical reasons for them.

Formality and insipidity are so often the characteristics of the old style of planting trees, designed for ornament, in a regular and uniform intermixture of the several species employed, that I approached the first examples of a different system with a strong prejudice in its favour. But I must frankly confess that, after examining a great variety of speci-

mens of the new style, it seemed to me, wherever pushed, as it often is, to its extreme limits, to be even more insipid and formal than the old one; the masses of trees, when insulated and distant, looking as lumpish and pudding-like as any clumps that deform an English park, and when connected with their masses, having almost invariably a meagre effect, utterly devoid of that variety of outline and contrast of light and shade so essential to picturesque beauty; and the masses of shrubs resembling clipped hedges more than any thing else. It would lead me too far to cite instances, but I may give one of a shrubbery designed to ornament a very handsome public building, which may serve for all the rest. This shrubbery was planted in the following manner: — First came a mass of lilacs for about 20 ft. in length, then one of mock orange for 15 ft., next one of laburnum for about 25 ft., and afterwards masses of about the same extent of privet, acacia, and various species of *Cornus*, *Rubus*, and other common shrubs. As all these masses, now grown to the ordinary height of the shrubs, had been originally closely planted with plants of the same size, each mass formed a hedge, as regular as if clipped, a step higher or lower than the adjoining mass, and the whole precisely resembled the shrub beds of a nursery, being not one whit more interesting or more varied, except by the autumnal decay of all the under leaves of some of the masses, which then resembled a crowded plantation of gooseberry bushes, ravaged by caterpillars. Insulated clumps of shrubs, which I saw in different places, planted on the same principle, with but one species in each clump, could be compared to nothing so aptly as to dunghills clothed with a rank vegetation of weeds, which, at a distance, they so exactly resembled, that this was the comparison which a boy of fourteen, along with me, immediately made when asked what he thought they were most like, though he had no hint that the same idea had previously occurred to myself.

In giving these as the impressions made on myself by various specimens of the new style of planting, I by no means wish it to be inferred that M. Sckell, or whoever was the original author of the new system, is answerable for the very obvious defects pointed out. Though I think the system thus bad when pushed to an extreme, I have seen many instances in which its partial adoption, — that is to say, where one species of tree or shrub was made to *predominate* in certain quarters of the pleasure-ground, but with an admixture of others sufficient to give due relief and contrast, — had the happiest effect: and I think it probable, judging from the park at Munich, laid out, at the suggestion of Count Rumford, by

M. Sckell, that this last-mentioned modification is that which this eminent landscape-gardener has recommended, and that much of what is objectionable in other quarters is chargeable on imitators of his style, who, as is so generally the case, have pushed the system of their master farther than he intended.

It is to these imitators I would beg to suggest, that, in taking nature, as they profess, for their pattern, they have deviated, in two respects, very widely from this confessedly only safe guide to all that is lovely in scenery.

Their first error consists in planting their masses (composed of either trees or shrubs of one species) with individuals of the *same age and height*, and *too closely* together, which can only lead to lumpish forms, devoid of all variety of outline. A thick natural wood of young fir trees, for example, all of the same height, may, when old, be grand and sublime, but can at no age be considered beautiful; while, as I have seen repeated instances in Germany, a young wood of fir trees, of one species (as the spruce fir), planted by nature to succeed an old one, — where you see a group composed of one tree 20 ft. high and others of various heights down to 1 ft., and other groups varying in every possible combination of height and the number of individuals composing them, and the whole partially separated by irregular glades of grass and yet united into a whole by scattered and single trees, — may be often at once extremely beautiful and picturesque.

But, however interesting such a wood of one species may be, it must, I think, be considered inferior to a similar natural wood of *several* species, such as the New Forest in Hampshire for example, with which no woods that I have seen in Germany can, in my opinion, at all compare; and simply for this reason, that, in addition to the above-mentioned variety, proceeding from grouping, age, size, &c., you have also that arising from *variety of species*: and this is the second point in which the new system, as generally practised, seems to fail. In the New Forest we find in one quarter one kind of tree predominate, in another quarter another; in one part chiefly oaks, in another hollies, and so on: but yet the predominating species is scarcely ever *exclusive*, but always so grouped and contrasted or relieved with other species, both of trees and shrubs, as wholly to avoid that formal sameness which is the general result of modern planting in masses of but one species.

Much of what is said above is equally applicable to the modern fashion of planting the flower clumps of the garden and pleasure-ground with but one kind of flower. The effect,

in my opinion, is almost always bad : there is as much glare and want of relief in a great bed of roses, geraniums, irises, &c., as in the old plan of indiscriminate mixture of small patches of many species ; and with less variety. A collection of mere roses is doubtless highly interesting when judiciously arranged by a mixture of tall and low growing species of various tints of colour, and the whole set off by the dark green of trees and shrubs in the background, as in the superb collection of the King of Prussia *, at his delightful country palace on the Pfauen Insel (Peacock Island), near Potsdam, which does such credit to his head gardener, M. Fintelmann, and which I had the high gratification of seeing in full splendour in July last : but a clump solely of the China or any other kind of rose, as is often seen in the midst of a grass plot, seems to me as glaring as would be a nosegay wholly of roses ; and in the case of irises, &c., there is the further great objection, that a week's display in spring is purchased with months of subsequent barrenness and deformity. Two points seem clearly required in a flower clump : 1st, that it should present a *succession* of flowers ; and, 2dly, that these should be contrasted and relieved by a due intermixture of *green*, just as the native taste of the veriest peasant tells him is requisite in the bouquet which he offers his mistress. On this principle were formed the flower clumps in the pleasure-grounds at Wilhelmshöhe, the superb country residence of the Elector of Hesse-Cassel, which I saw last June, and the beautiful effect of which it was impossible not to admire. The centre of each was occupied by tall-growing plants, not yet in flower, and other portions of the surface by smaller ones, and between these were planted double stocks, purple, scarlet, and white,

* One feature of this collection, which was purchased by the King of Prussia, from the banker (or his heirs) who originally made it, for (if I recollect right) 8000 dollars (1200*l.*), deserves mention. The tree roses (those grafted on tall stems) were not planted as single and detached trees, as they are so often seen, when they can claim no other merit than the childish singularity of looking like rose-bushes stuck on the end of long sticks, but were intermixed with the rest, their stems being concealed by other tall-growing kinds, and thus increasing the variety of outline of the whole mass ; the only rational purpose to which these trees can be applied. Pfauen Insel more resembles an English park than any other ornamented place I have seen on the Continent, both as to its trees, many of which are very fine, and its turf, which, at the hot season, when I saw it, had all the verdant freshness of spring. To keep it, however, in this state, as the soil is very sandy, requires constant irrigation, for which purpose, and for watering the whole, not less than 8000 cubic feet of water are in summer daily raised by a steam-engine, and, after falling from a handsome fountain, are distributed to every part of the park and pleasure-grounds, which are kept in admirable order, and reflect the highest credit on M. Fintelmann.

in considerable masses of each colour, and other flowers (of which I forget the sorts) of higher growth above them, and of lower growth beneath them, all in pretty large patches of each, the whole being set off in tenfold beauty by the happy intermixture, in every part, of the green leaves of the plants which were next to flower.

To obviate the bad effects of decayed flowers, perhaps the best plan of ornamental flower clumps, where expense is not regarded, would be to have them partly planted with evergreens of low growth, or kept low by pruning; and between these to transfer from the pots in which they had been raised, the finest flowers of each season just taken on the point of flowering, in sufficient masses of each colour, and to be removed and replaced with others as soon as they had done flowering, so as always to have a new and brilliant display at all periods of the year, and at the same time a due contrast of a more sober colour from the intermixed evergreens.

In the new plan of planting flowers, as of trees, the professed object is a more close imitation of nature; but it may be doubted whether the object is better attained in one case than the other. It is true that we more frequently see wild flowers growing in masses than singly, but these masses are seldom large, and are almost constantly more or less intermixed with, or skirted by, other plants. Take, for example, the common starwort (*Stellaria Holóstea*), which is so great an ornament of our hedge banks in spring. The tufts in which it grows rarely exceed a square foot or two in extent, and have almost always a border of *Lýchnis*, *Erýsimum*, or other plants with abundant foliage, besides the shrubs of the hedge and bank as a background, to contrast with and set off the beauties of its flowers, which, thus half displayed, it will scarcely be denied, are far more attractive than if crowded into one large staring mass, in a single bed, as in the modern fashion. In like manner, how rarely do we see the foxglove, when adorning our heaths in its utmost profusion, collected into large unvaried masses! and if such accidentally occur, though we may for a moment be attracted by their brilliant singularity, it is not on them that the eye delights to dwell, but on the smaller groups of various heights half concealed by the ferns or brambles from amidst which they spring, and which, like the frame of a picture, enhance their natural beauty.

I may conclude these desultory remarks by observing, that, however great is the improvement in modern gardening by the general preference and adoption of the English or natural style, much yet remains to be done in every part of Europe to give to this style its full effect where well known, and to

extend it where it has as yet made little way, as in Italy; where, for one *Jardin Anglais* that is met with, or even one genuine specimen of the old style, such as the fine Boboli gardens at Florence, attached to the Grand Duke's palace, which one would by no means wish destroyed, twenty villas are seen with gardens "built rather than planted," having little of vegetation in them but clipped hedges and rows of orange trees in pots, and, in a country where the summer heat is so great, increasing it by the glare of gravel and stone walls, instead of obviating its inconvenience by profusion of trees and luxuriance of shade.

I am, Sir, &c.

Florence, December 22. 1829.

W. SPENCE.

ART. VIII. *Remarks on Sir Henry Steuart's Planter's Guide.*

By —N —H.

Sir,

THE main topics of conversation at this time are Sir Henry Steuart's *Planter's Guide*, the ignorant state in which he found gardeners, and the enlightened state in which he has left them. Not that I have any objection to Sir Henry getting his full share of praise, but at the same time I don't see why gardeners should sit quietly down after a hard day's planting, and allow this great meteor of the north to blaze out with such impunity as to sweep it all up, particularly as I was bred up in the north myself, and have seen feats of the very same description performed at sundry places every planting season for the last fifteen years, the results of which were generally satisfactory to both proprietors and gardeners, and solely conducted by the skill and industry of the latter, who, I have every reason to believe, scarce ever heard of Sir Henry Steuart, whatever they might have done of Lord Fitz-Harding. For my part, I have conducted such operations every season, more or less, within the last seven years, without ever thinking there was any conjuring in it. In one of those years I changed a piece of bare ground, nearly two acres, into a plantation consisting of oak, ash, elm, beech, birch, lime, firs, &c., the average height of which was from 5 ft. to 20 ft. and upwards; they were transported about a mile, nor was there a single death amongst them that I remember. They are now looking equally well, nor can I see any difference in their size from those that were left in the plantations from which they were taken. As to my methods of taking up and plant-

ing, I shall not enlarge upon either, as every gardener knows that his trees will reward him for whatever pains he may take in the removing of them: but this I shall say, that I always prefer fresh soil to the old that would adhere to the roots; and, notwithstanding that I never yet used a pick, I have always used three-prong forks in preference to spades; and when the tree is well undermined, I cause as much of the earth to be picked out from between the roots as I possibly can, with sharp-pointed sticks, with which, in my opinion, a man is less likely to injure the roots than with a pick, as he can humour his hand to the position of the roots, either on this side or on that, above or below them, which he could not do so nicely with a pick. In this way the trees are nearly, or entirely, freed from the earth which would otherwise adhere to them, the weight of which, in my opinion, only tends to rack and sprain the roots. By this method I have removed large trees, some roots of which I followed 15 ft. from the stem; but this is by no means necessary, although I have planted many that required a pit 10 ft. over. A tree with such roots as this I have planted in ground well prepared, the earth made very fine, or some brought on purpose, carefully filled in amongst the roots and fibres, and fastened with a pot or two of water, which carries with it the small particles of earth and sand, and by that means fills up every cavity, so that, as soon as any fibre makes the least essay it catches hold, and one mouth begets another, and so on, till the whole is in motion. Should it be required to take any off the branches, I always defer it till the following season. I have a great respect for Mr. Gorrie, but I cannot agree with him in cutting any branches off fresh-planted trees, or taking the leaves off cuttings; in fact, I have found cuttings, without a leaf removed, strike much better than those which were stripped. The last three years I have particularly remarked this in striking *Eccremocarpus scaber*: those cuttings struck best that had a leaf or a pair remaining at the very joint at which they were cut off, and, in fact, formed plants in nearly half the time that those did which had them removed.* This sketch of my manner and ideas of planting, &c., I give you, and, if you think proper, the world, without any thanks to Sir Henry Steuart or Sir Walter Scott, whose paper things on planting I have never once seen. The latter must recollect that gardeners now are very different men from what they were in the days of Andrew Fairservice, and that they can improve their minds

* This is proved by every-day experience: every man must be aware that roots make branches, and branches make roots, else how could a cutting strike root, or part of a root form a plant?

by other books than those of worthy Mess John Quackleben's *Flower of a sweet Savour*, or Doctor Lightfoot, however ponderous his volume might have been. But although I do not return thanks to any of our northern lights, I must thank the many intelligent gardeners I have lived under; and last, but not least, *A Discourse on Forest Trees*, by John Evelyn, Esq., in my possession, where he tells us about Count Maurice, governor of Brazil, planting a delicious paradise near Fri-burg, containing 600 cocoa trees of 80 years' growth, and 50 ft. high to the nearest bough. These he wafted on floats and engines four long miles, and planted so luckily that they bore abundantly the very first year. Nor hath this succeeded in the Indies alone; Monsieur de Fait, one of the mareschals of France, hath, with huge oaks, done the like at Fait. He then brings it nearer home: a great person in Devon planted oaks as big as twelve oxen could draw, as he was told by the Right Honourable Lord Fitz-Harding, who hath himself practised the removing of great oaks by a particular address, extremely ingenious, and worthy the communication: he then states what this is:—Choose a tree as big as your thigh, remove the earth from about it, cut through all the collateral roots, till, with a competent strength, you can force it down upon one side, so as to come with your axe at the tap-root, cut that off, re-dress your tree, and so let it stand, covered about with the mould you loosened from it till the next year, or longer if you think good; then take it up at a fit season, it will likely have drawn new tender roots, apt to take, and sufficient for the tree, wheresoever you shall transplant it, &c. &c. Now, where can there be the least doubt that many gardeners in Scotland have read this work, and acted upon it, long ere they heard of Sir Henry Steuart?—at any rate, I know some that did. But, to prove that there are many of these new discoveries which are perfectly old to a number of gardeners, if your correspondent who gives his trees a top-dressing of stones would look into Virgil, *Georg. ii.*, he will there find it described as a thing very commonly done; and if Mr. Billington will look into Evelyn's *Sylva*, he will see that he recommends rubbing off the buds, or else the very young branches; any thing else makes him shudder, except where they have been neglected. He quotes Lawson, who published in 1597, who says he can form a tree into any shape or form, with a fine clear stem, without any wounds, by following it up from infancy. All this clearly proves to me that these things have all been seen and acted upon before, and gardeners are not ignorant of them at this day: but I agree with Quercus that it is not gardeners or wood-foresters that are to blame for the ill-pruned

trees ; for we often see that it is the gentlemen themselves, for employing such fellows as old coachmen, plough-wrights, and gamekeepers, all of whom I have seen cutting and chopping where they pleased ; they not being fit for any thing else, and it was thought any blockhead could superintend that sort of work. I hope all gardeners will join with me in returning thanks to Anon., who (if it is Mr. Sang) is a kind good man, and I am only sorry to say I have not seen him these eight years.

I remain, Sir, &c.

—s, February 15. 1830.

—N —H.

ART. IX. *On planting and pruning Forest Trees.* By Mr. JOHN HOWDEN, hitherto known as AGRONOME.

Sir,

HAVING been very fond of reading ever since I could read, which is some forty years ago, I have frequently been led to change my opinions on various subjects, and even my theological opinions among the others : yet there is one opinion which I have never changed, namely, I always think it right to read or hear every man's opinion, and then judge for myself ; to " prove all things, and to hold fast that which is good." The difference of opinion, in many of your correspondents, respecting the management of forest timber trees, is certainly very striking : I think it must proceed from the different soils, climates, &c., of the local situations of the various writers ; and nothing can settle such disputes but practical experience in each operator in his own place. The letters of Mr. Withers must appear very ridiculous to a native of Scotland or Wales, or of the moorlands of England. It is a maxim with some, only to plant such soils as will not pay for cultivation ; and a very good maxim it is, provided that every nobleman and gentleman in Great Britain and Ireland would follow it up by another maxim, viz. to plant every acre of their estates that will *not* pay for cultivation. (See *Encyc. of Agr.*, § 3631, 3632, &c.) It is, indeed, a national disgrace to see so many tens of thousands of English acres unplanted, and yet scarcely capable of maintaining two rabbits per acre ; the whole of which, if planted with judgment, that is, all resinous trees on the highest grounds, hard-wooded trees on the best ground, and soft-wooded trees on the boggy ground, would afford a handsome remuneration. Trenching such land is not only of no use, but is really hurtful, where there are only a

few inches of poor soil on rock, gravel, or grey sand, as void of nurture as the congealed lava from Mount Etna or Vesuvius; yet even such will grow many of the pine and fir tribes of trees better, in three inches of soil, than if planted in rich loam. As the trees grow, the soil will increase, and be fit for a crop of oaks, &c., by the time that the pines or firs are properly thinned out for timber trees. Suppose an acre of such land is bought for 10*l.*, and planted for 5*l.*, by contract, with larch fir, Scotch pine, birch, and mountain ash, in equal proportions; in the course of 15 years, such trees will every one be from 15 to 30 ft. high; and, if they have been *well pruned*, they will be still higher and more valuable. To prune a tree *well*, is to prune it while it is young; say at 6 ft. high, it should be pruned 2 ft. up the stem. This is done in one minute, or less, with a good Sheffield knife (Barns, maker). The trees should be gone over in this manner every two years, say six times, or six minutes for each tree, equal to one farthing! Observe that I speak from experience. By this early pruning, there is no occasion for thinning out any trees till they are fit for *something*. The Scotch pine are thinned out first for rails, &c.; the best of the larch are left as timber trees; the birch, mountain ash, &c., are cut periodically for crate-rods, &c. &c.; and oaks, &c., are introduced into all vacant places. I shall not attempt to make a debtor and creditor account of such an acre of land, as the demand and locality of markets make so much difference; but, at the lowest calculation possible, the profit is sufficient to induce every landowner to plant his waste lands with trees of some sort. With respect to pruning, it is a maxim with me to prune young, to prune often, and not prune too much at a time: I once killed a beautiful row of spruce trees by pruning them up too much in one season. We can never do wrong in taking off two crops of branches every second year, while the tree is in full vigour: after it begins to be at a stand-still, it should never be touched more; pruning then can do it no good, and may do it much harm.

I have been reading the letter of Mr. Blaikie to the Duke of Bedford, in the *Country Times* newspaper of Feb. 15. The letter is certainly written much more in the spirit of meekness than the letters of Mr. Withers; nevertheless, he is as much mistaken in the vegetable economy or physiology of forest trees as Mr. Monteith: his method of pruning, yclept *fore-shortening*, is all very well for laurels, hollies, and other ornamental shrubs and trees, but for forest timber it is the very worst of all bad systems. Mr. Blaikie seems to think that the boughs of a tree will grow out and fall off in the same manner

as the hairs begin to grow out and fall off from my old head; but both he and Mr. Monteith are sadly mistaken in this point. It is well known that every knot and every bough proceeds direct from the centre of the stem; and, whether they are cut off, or not cut off, they would still be knots, and the sooner they are cut off the better. A tree lays on its wood in the same way as a candle is increased by frequent dippings; every season, like every dip, lays on a fresh coat; and the sooner that the wick of a candle, or the stem of a tree, is made smooth, the more free will either be from unsightly protuberances. Every nurseryman knows how to prune a standard apple tree, so as to give it a fine clean stem; and every forester should know how to grow a rail, or a scaffold-pole, a mill-shaft, or mast of a ship: but Mr. Blaikie's system of foreshortening deprives him of even bends or knees for ship timber. The beech trees which he mentions as having been pruned eighty years ago, should have been pruned just a hundred years ago, as I presume they were above twenty years old at the time of pruning; and, if they had been foreshortened, they would have been of still less value. Most carpenters, &c., disapprove of pruning trees, as they say that the finest timber is from the forests abroad, where pruning was never thought of. I grant this is true; but such trees were planted or sown by the hand of Nature, and, perhaps, came up as thick as in a nurseryman's seed-bed; so that their branches were all killed and rotten before they were more than twigs. At length they began to oppress and kill each other, just as the world does: the stronger always oppress the weaker, and such as get the lead are sure to keep it, so as to kill all their little companions; and there they reign, lords of the forest, for perhaps a couple of centuries, when they come to England, fine-grained, free from knots, and every thing that a carpenter can wish for. This is called natural pruning: but in England, where every acre of land and every rail is of some value, pruning well is pruning profitably. Hoping that every forester will make himself well acquainted with the process of making candles, for the purpose of throwing light on the subject of pruning,

I remain, Sir, yours, &c.

AGRONOME.

P. S. — I am particularly pleased with your anonymous correspondent's critique on Sir Henry Steuart's work: it is almost word for word of one I had written some time ago, but never sent; and I believe that all the letters of anonymous writers are like the votes or speeches of a member of parlia-

ment for a rotten borough : they are taken little notice of. I shall, therefore, give you my full name and address : so that, if I have ever said any thing improper, I am fairly open to conviction ; and

I am, Sir, &c.

JOHN HOWDEN,
Bailiff, &c., to John Philips, Esq.,
Heath House, near Cheadle,
Staffordshire.

March 5. 1830.

ART. X. *On the Sexes and History of the Lombardy, or Turin, Poplar (Pópulus dilatàta).* By Mr. JOHN DENSON, Jun.*

Sir,

WHILE curator of the botanic garden at Bury St. Edmunds, I examined all the blooming specimens of *Pópulus dilatàta* which grew in the town and neighbourhood, in the hope of acquiring both sexes for the collection of the garden. I could, however, find only the *male*. I told this fact to Mr. Sabine, on his visiting the garden, and understood him to reply : “ The *female* is not in this country. The Duke of Argyle imported some statuary from Italy, to Whitton in Middlesex, part of the package of which, on being planted, disclosed *Pópulus dilatàta, male*, and there has been no other importation.” I repeated this statement to a very intelligent gentleman, W. C. Oldham, Esq., then (in the autumn of 1827) residing at Rickingham, near Diss, Norfolk, who could not assent to its having been exclusively introduced as above stated ; himself, and other gentlemen of his acquaintance, having always understood that it was first brought to this country by the Earl of Rochford, while he was ambassador to the court of Turin, in 1751, and who established it at his seat at St. Osyth, Essex. The Rev. S. Carter, and other relations of the Rochford family, have also this impression ; and Mr. Oldham once saw the very old gardener at the above seat, who attested the truth of this notion, and that himself was the person by whom the twigs of the poplar were planted. They were incidentally sent over, as in Mr. Sabine’s account ; but, if Mr. Oldham rightly remembers, it was in this instance as the package of orange trees.

As to the fact of the importation of this species of poplar,

* Mr. Denson’s father is the author of *A Peasant’s Voice*, &c., quoted with so much applause in a late Number of the *Quarterly Review*.—*Cond.*

both accounts are probably correct, if I rightly understood Mr. Sabine's remark ; but, as there has been another importation, the *female* may be in the country ; and the examination of the Lombardy poplars about St. Osyth, if any still exist there, would determine this question. As it blooms in the end of March and early part of April, perhaps some of your readers in the neighbourhood will examine the blossoms, and settle this point.

Having, however, since learned where the female exists, I would record the place in your Magazine, that all who desire it may procure it thence. It is at the university botanic garden at Göttingen ; M. Christopher Abraham Fischer, the inspector of which, in reply to an application for it from Mr. N. S. Hodson, superintendent of the botanic garden at Bury St. Edmunds, remarks, in a letter dated Dec. 16. 1828 : — “ Many years since, I looked fruitlessly for the *female* of *Populus dilatata*, amongst many thousand trees, all round Göttingen. Last year I was so fortunate as to find a single tree, and send you some cuttings.” These cuttings, although planted as soon as received, and duly attended to, all failed ; but, as poplars are notorious for freedom of growth, this should not deter from other importations : and in proof that no one need fear troubling M. Fischer, I subjoin an extract from one of his letters, dated Dec. 20. 1826 : — “ It is always very pleasant to me to see, in the *Botanical Magazine*, that I am so fortunate as sometimes to send a new plant to England, to a country which, from my short visits there, I very much like and esteem.” Mr. J. Hunneman, I have no doubt, will readily forward any communication to M. Fischer.

I am, Sir, &c.

Feb. 1830.

JOHN DENSON, Jun.

ART. XI. *Account of the Botanic Flower-Garden now forming at Trelowarren for the Culture of Hardy Plants.* By Mr. WILLIAM DUNCAN, Gardener there.

Sir,

THE object of this garden connects itself not only with the study of the vegetable world, but with an endeavour to infuse a scientific knowledge of plants into the empirical agriculture of the community amongst which it is situated. It is intended to become a nursery for the developement of all those plants which are eligible for agricultural economy, by which it will operate on those who seek it for its practical use,

as well as on those who study botany as a branch of natural history.

The extent of Trelowarren botanic garden is a square of nearly an acre, lying direct east and west, surrounded by a brick wall 16 ft. high. On the south aspect of this wall will be a range of glass for the culture of the more tender exotics. One half of the garden will be illustrative of the Linnean arrangement; the other half, of the natural arrangement of Jussieu, as adopted by Decandolle. Each arrangement is surrounded by a border of 5 ft. in width, appropriated to the flowering of the more beautiful herbaceous plants, including annuals. Through the centre of the garden there is a gravel walk, in which, in the middle of the garden, there is a temple partaking of the character of a botanical library with its appurtenances, as hortus siccus, &c. Six feet from each wall is a gravel walk, cutting at right angles the centre walk, which affords three additional distinct departments; the first for medicinal plants; the second for agricultural purposes; the third for the family of Gramineæ.

With regard to the detail of the Linnean department, care has been taken to limit the number of species of the more numerous genera to six, with the exception of *Solidago*, *Aster*, *Heliánthus*, *Cnicus*, *Carduus*, and some others, where illustrations are necessary to decide the approximation of one species in relation to another of the same genus. By this limitation a greater number of genera is obtained. The department is divided into thirty-six beds, each $2\frac{1}{2}$ ft. wide, with an alley $1\frac{1}{2}$ ft. wide edged with box and gravelled. The class Monándria Monogýnia commences with the genus *Blitum*, with its species; proceeds thus on through the whole system as far as Syngenèsia Polygàmia Necessària, embracing every genus in which species are found suitable for botanical purposes. This affords 1000 species to develop the sexual system of plants.

With regard to the natural arrangement, the ground plan is the same as that for the Linnean, which, consequently, will admit of the introduction of the same number of species; but varying these, unless where the introduction of the tribe renders this impracticable.

The arrangement of the Gramineæ contains at present 200 species, but sufficiency of room still remains for the introduction of a larger collection, which will be immediately effected.

It is likewise in contemplation to add to this garden another portion of natural history, viz. an arrangement of earths, in some way approaching to that in the Jardin des Plantes at Paris.

The locality of this garden is within 100 yards of the house, directly annexed to a very beautiful and extensive pleasure-ground, laid out in the old style of gardening. The entrance will be formed by two folding iron gates, the pillars of which will terminate in busts of the founders of the two systems.

I cannot end this letter without passing some few observations upon the utility which would attend the general introduction of private botanic gardens in England, having similar purposes to those of Trelowarren, viz. the joining of the useful to the pleasing. The numerous books on botanical subjects and vegetable culture which daily issue from the press, some of which are of the most costly description, are proofs sufficient of an ardent spirit of enquiry, which, were it seconded by practical botanic gardens, or what may be termed living grammars of botany where its theory can be united with practice, the result would eminently increase botanical knowledge. In fact, without its practice, its theory is a mere trifle. The great drawback upon the practical botany of this country is in not having botanic gardens wherein any facility is afforded to its study. It is true that of its theory nothing is wanting: the whole of the educated portion of the nation can rehearse it as a part of their routine of scholastic information; but there it ends. A professor of botany, of very superior abilities, has been elected to the botanical chair of the London University: his lectures, no matter how brilliant they may be, will never effect their purpose, unless they are immediately carried in the mind of the pupil to the botanic garden, where he can compare the genera with their affinities, and by self-enquiry make himself master of the characters which form the genus. Such a routine of education, and with it the genius, is what will form the botanist; any thing else is but a dumb show. It is greatly to be lamented, in this enlightened age, that gentlemen's head gardeners should show such a want of taste and science in the arrangement of their plants. For instance, if a catalogue were published of the plants at Syon House (the seat of the Duke of Northumberland), precisely as they are arranged, could it be possible to conceive any thing more frightful than it would offer to the scientific world? Although possessing a very superior assortment of plants, and, indeed, the elements of an attractive botanic garden*, the

* We presume our correspondent alludes to the state of things at Syon as they were three or four years ago: every thing is since entirely changed, and not a wall, a walk, or a bed of the old botanic garden remains; the new one is not yet planted, and therefore cannot be criticised. — *Cond.*

associations which are identified with natural philosophy are destroyed, and the mind left to wander on objects, as it were, unsusceptible of the influence of science.

I am, Sir, &c.

WILLIAM DUNCAN.

Trelowarren, Cornwall, November, 1829.

ART. XII. *Plan of a Flower-Garden, with a List of Plants for one Year*, by a young Lady. Communicated by J. G.

Sir,

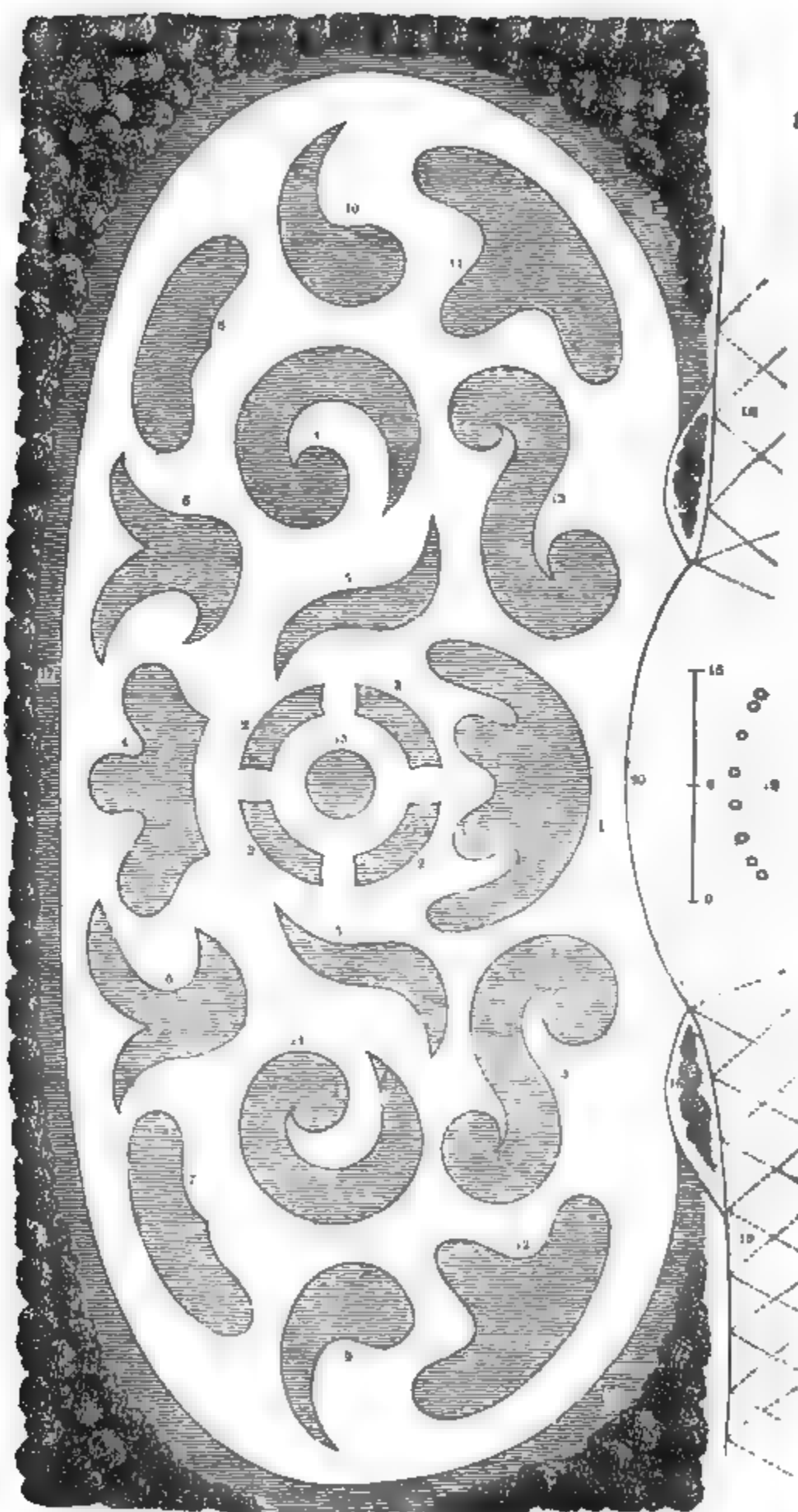
THE following plan is the composition of a young lady, who, being fond of flowers, has directed her attention to the effects of arranging them in different manners. Not being satisfied with the garden as it lately stood, she made the following sketch (*fig. 84.*), which, as a whole, is considered by all who have seen it as very perfect in its kind; for which reason I send it to you, thinking it may afford some useful hints to your readers. The beds are on turf, and the surrounding margin is of choice shrubs, early-flowering deciduous sorts, and low, or slow-growing, evergreens; the great object being to admit sufficient sun and air, without which the flowers come to nothing.

J. G.

Hampstead, November 11. 1829.

REFERENCES TO THE PLAN.

- 1, Choice herbaceous plants, perennials.
- 2, Anemones in spring; *Tigridia pavonia* in summer.
- 3, Vanthol tulips and ranunculus in spring; choice dwarf geraniums in summer.
- 4, Narcissus and jonquils in spring; *Salvia splendens* and *Fuchsia coccinea* in summer.
- 5, Ten-week stocks in spring; *Clarkia pulchella* and Indian pinks in summer.
- 6, Tulips in spring; *Oenothera speciosa* in summer.
- 7, A collection of campanulas.
- 8, A collection of *Phlox*.
- 9, *Fritillaria meleagris* and winter aconite in spring; *Lobelia fulgens* and *L. Erinus* in summer.
- 10, *Hyacinthus* in spring; *Fuchsia macrophylla* in summer.
- 11, *Oenothera* and China asters.
- 12, Choice herbaceous plants.
- 13, Crocuses and snowdrops in spring; pinks and carnations in summer.
- 14, Sweet-scented and crimson China roses.
- 15, Sun-dial.
- 16, Rock-work.
- 17, Edging of *Rosa semperflorans*, and within a row of georginas, about 100 sorts; every 12 ft. a standard Noisette rose of sorts.
- 18, Rustic arcade, covered with ivy.
- 19, Rustic covered seat.
- 20, Open gravel.



ART. XIII. *On the Treatment of the American Shrubs in the Pleasure-Gardens of Francis Canning, Esq., Foxcote.* By Mr. W. B. ROSE, Gardener there.

Sir,

I AM induced to send you an account of my mode of treating American shrubs, from seeing in your Magazine (Vol. V. p. 143.) an abridged communication from Mr. Donald on the same subject, and also from the bad appearance which these plants generally present. At the north-west corner of the noble mansion at this place my American plants may be seen in full flower, with corollas more than 14 in. in circumference. They grow in sand mixed with lime and bog earth; the sand was washed down through the plantations from the sandy hills above, carrying the dead leaves with it into the fish-ponds. After several years it was taken out and mixed with lime, for agricultural use. I took some of this, and added a little bog earth to it, and I placed the plants in it. They are considerably shaded by the mansion, and some large elm trees, &c. I peg down all the bottom branches, cover them with soil, leaving only the ends above the surface of the ground. In this manner they bloom beautifully, and, the other parts of the plants running upwards and coming into flower, the whole has the appearance of one thicket of blossom, and is the admiration of every one.

I this year planted a quantity of American shrubs in a heap of mud, in a sunny situation, by the side of a large fish-pond: they are in a thriving condition at present, but how they will be some time hence I cannot determine.

With respect to my other bed of plants, being in a cold situation, I always cover them in November with a shelter of common laurel boughs. I let this covering remain till May-day, after which the plants present a most beautiful appearance.

I am surprised that the common laurel is not more cultivated than it is, as it will grow under the dripping of trees, where many other plants will not thrive, and it moreover affords an excellent shelter for game, besides other purposes to which it may be applied.

I am, Sir, &c.

W. B. ROSE.

Foxcote, near Shipston on Stour,
June 10. 1829.

ART. XIV. *On raising Auriculas from Seed, and on a new Description of Covering for an Auricula Stage.* By Mr. P. CORNFIELD, Florist, Northampton.

Sir,

I OBSERVE in your Magazine (Vol. IV. p. 481.) a correspondent gives an account of his manner of keeping and of sowing his auricula seeds: he says he keeps his seed in a damp room till the time of sowing, and then sows it in a common garden frame; and he thinks his plan better than Mr. Hogg's, who keeps his seed in a dry room, and sows it in front of a green-house. Now, Sir, I beg to differ from both your correspondents as to the way they recommend. I shall not presume to say that my way is preferable to all others, but content myself with giving some account of the mode I pursue in raising auricula seedlings. When my seed is ripe, I prepare my soil to receive it, in the following manner: I sift the soil, which is chiefly of bog and old rotten cowdung; I then sprinkle it, to make it quite moist; then I put some of it into a shallow tin pan, and place it over a clear fire, till it is as hot as I can bear my hand in it. I keep stirring it till I think it has destroyed any seeds of weeds, or the larvæ of insects; preparing soil enough to lay it about 3 in. or 4 in. deep from the upper edge or rim of the pots. I then gather the seed-pods, rub the seeds out on a sheet of paper, and sow them immediately, then sift through a very fine sieve just enough of soil to cover the seed, about as thick as a sixpence. I place my pots in a shady situation, or where they can only have the morning sun for an hour or two. I use no frame or glass of any sort till after Christmas, as they will generally bear a good deal of cold till that time. I find the seed, which I sow as thick as nearly to cover the surface of the soil, will come up plentifully in three weeks or a month, and great numbers of the seedling plants will be fit to prick out in November or December; being careful to extract them so as not to disturb the lesser plants. The seed will continue to come up for months after; indeed, what I sowed at the beginning of last August is coming up daily. I preserved a portion of my last year's seed, and sowed it on the 6th of April, three large pots, full as thick as before, which are now up as thick as clover, and will be fit to prick out in a few days. I find that new seeds make the strongest and most healthy plants.

I have at this time in use a new description of covering for my auricula stage, which, I find, answers the purpose admirably well, and is of the most economical kind ever yet invented.

It consists of frames, made of light thin deal, in the manner of cucumber lights. These have some fine cambric calico, strained tight, and nailed on the frames, which are oiled with clear linseed oil once over. They admit nearly as much light as glass, will repel the wet, and completely prevent the sun's rays from injuring the blooms or plants.

I think of using the same frames, or lights, as an awning for my carnations, as I have made them *exactly* to fit the carnation stages. I do think this description of covering would answer well for covering tulips, ranunculuses, or any kinds of florists' flowers, as being preferable to thick mats, canvass, &c.

I remain, Sir, &c.

P. CORNFIELD.

Kingswell Street, Northampton, May 18. 1829.

ART. XV. *On the Culture of the Ròsa odoràta, the Sweet or Tea-scented Rose.* By Mr. J. ELLES, late of Longleat Gardens.

Sir,

THE sweet-scented China rose, although universally admitted to be a most lovely flower, is still, generally speaking, not a common plant in our flower borders; and yet it may be propagated with the utmost possible facility, and, when planted out in the open border, it is nearly, if not quite, as hardy as the common China rose, which, during so many months in the year, decorates the cottage and the flower-garden, but, unfortunately, does not fill the air with that delicious perfume which is exhaled in such profusion from its more favoured congener the sweet-scented variety. To remedy this defect is the object of the present communication.

I have before observed, that it is nearly, if not quite, as hardy, as the common China rose; and, I believe, most people consider the flower, independently of its fragrance, as more beautiful, if not so showy. But its growth, in favourable situations, almost exceeds credibility. I have seen upwards of two hundred flowers and flower-buds upon a single shoot; but that was a shoot as thick as my little finger; and this fine plant, too, under the management of a poor weaver, a man of great singleness of mind, an ardent lover of flowers, and, indeed, altogether, a most praiseworthy individual.* This extraordinary specimen, it is true, was budded and trained against his cottage; but no protection, save the eaves, was ever thought of; and thus it has continued, for many years, his pride and

* Mr. John Parsons, Dilton's Marsh, Westbury.

the wonder of his neighbours. I have one which has stood six winters with little or no protection.

In the spring of last year, I planted out about fifty plants of this rose: they grew and flowered tolerably well (Mr. Young of Epsom saw them); and, although the last winter was a severe one, every plant survived, and they are now flowering and growing as freely as the common China rose. In April, we lost three plants through excessively wet weather; the subsoil being a blue clay, and very retentive, the bed was like a quagmire for weeks together.

The following mode of propagation is easy and expeditious: — Put a plant or two into the hot-house in January or February, and there will soon be some young shoots: as soon as they have three or four leaves, take them off, no matter how tender or succulent, *but never remove or shorten a leaf*. Having prepared your cuttings, put them into sand, with a glass over them, in the same heat as the plants, and in three weeks they will be ready to be potted off. Thus continue taking fresh cuttings, or topping the cuttings already struck, till there are as many as you want. I propagated upwards of 100 plants in one season, from a small plant which only afforded three cuttings at the commencement.

I have little doubt that hundreds of gardeners are acquainted with the above method, and, probably, have for years grown this rose in the same manner as I have recommended; but, as it has not been noticed in the Gardener's Magazine, perhaps its beauty, fragrance, and easy culture are not so generally known as it might be wished.

I am, Sir, &c.

London, April, 1829.

J. ELLES.

ART. XVI. *On flowering the Chrysanthemum indicum.* By
A CONSTANT READER AND SUBSCRIBER.

Sir,

THE complaints of the last season on the flowering of the *Chrysanthemum indicum* induce me to add to the number of your correspondents by detailing the mode of treatment which I have pursued with the greatest success for some years, and which, if generally adopted, will insure their flowering in any season, however unfavourable.

Immediately after the plants have done flowering, I select the best of the young shoots, and pot them, three in each pot, in pots of 3 in. diameter, and place them in a cold pit or frame protected from frost, where they remain until the begin-

ning of April, when they are shifted into pots of 7 in. or 8 in. diameter, and remain in them until the roots have filled the pots; they are then finally shifted into pots 12 in. in diameter, where they remain to flower. The subsequent treatment is the same as that described by your able correspondent, A. C. Lambie. (Vol. III. p. 291.) I remain, Sir, &c.

A CONSTANT READER AND SUBSCRIBER.

January 23. 1830.

ART. XVII. *Notice of a Plant of Musa paradisiaca (the Plantain), which has flowered and ripened Fruit in the Garden of John Milford, Esq., Conyer, near Exeter.* Abridged from three Communications by Mr. HENRY DALGLEISH, Gardener to Mr. Milford, dated July 25., November 9., and December 23.

THE plant grows in a tub, and was only 2 ft. high when it was received into Mr. Milford's hot-house about three years since. It showed flower about the beginning of July last, and on the 25th of that month the spike of fruit, flowers, and unopened buds measured 3 ft. 5 in. long, and contained 21 spikelets, or hands, as they are called by the natives of tropical climates, each hand having or showing eight fruit; in all 168 fruit, 50 of which were at this time set, though the upper half of the spike had not then blossomed.

By the 9th of November the flowering of the spike was completed, and it was found to measure from the base to the extremity 3 ft. 8 in., and to contain 75 bunches of fruit. Two suckers which the plant sent up after it began to flower, and which were 9 ft. high in July, were now 11 ft. 7 in. high, their leaves 8 ft. long and 2 ft. 5 in. wide, and there were about seven leaves on each plant. The fruit is getting soft, and changing colour.

On December 23., Mr. Dalglish sent us two of the fruit, perfectly ripe. Half of one of them we boiled, and the other half we tasted in its raw state. The taste in both cases was rather insipid; the flavour, if any, seemed to be not unlike that of the sweet potato. The other fruit we kept, in order to note its decay, which took place in about a fortnight.

This is, as far as we have been able to learn, the first time that the plantain has been fruited in the west of England. It had before been fruited at Messrs. Loddiges', Sir Watkin William Wynne's, the Earl of Haddington's (East Lothian), and other places; and, we believe, there is now a plant in fruit in the magnificent conservatory of Mrs. Beaumont, at Bretton Hall. Mr. Dalglish is so good as to say, that if any one

desires it, he will send an account of his mode of culture. Such an account cannot but be acceptable to our readers, and we shall be most happy to receive it. We shall also be glad to know the total number of fruit ripened, and the length of time that this single plant contributed to the dessert. — *Cond.*
Dec. 30. 1829.

ART. XVIII. *Remarks on Mr. Newington's Observations on the Management of Peach Trees.* By Mr. JAMES CRAIG, Gardener to G. Cholmely, Esq. Howsham, York.

Sir,

PRESUMING that the pages of the Gardener's Magazine are open to fair discussion on any subject its previous pages contain, I take leave to offer a few remarks on Mr. Newington's observations (p. 55.) on the management of peach trees. Be assured, Sir, I am not turned critic for the sake of cavilling, but with the view of preventing what I think erroneous opinions from taking root and spreading their vexatious branches.

That gentlemen complain of, and that many gardeners feel and confess, a deficiency in the management of peach trees, I readily admit; and that the failure of the crops very often, though *not always*, arises from the manner of pruning the trees, I will not dispute; but I must tell Mr. Newington flatly that his text is entirely erroneous. He says, "It is the endeavour of every cultivator to procure annually a great supply of long and strong wood, sufficiently large to make basket-rods." Had not Mr. Newington given his name to this extraordinary assertion, I should have suspected that it was invented as a pretext for abusing his brethren; but, as he has given his name, I can only say he is under a mistake. In the circle of my acquaintance among gardeners (and it is not very limited), I do not know *one* who *endeavours* to procure "basket-rods" on his peach trees; and if they chance to have any such, they do not expect fruit from them. On the contrary, they all know the sort of wood which is most fruitful, although some of them may be deficient in the "ways and means" of procuring a regular supply of such wood; and Mr. Newington knows, or ought to know, that much depends on soil and situation: but he condemns us all, at "one fell swoop," and would send us to Malta or America. If he has been at these places, I believe he could tell us that the peach trees growing there are chiefly standards, and are not much troubled with the handywork of Nature's journeymen.

Peach trees left in a great measure to nature, and growing in the open air, in a soil and climate congenial to them, will not fail to exert those powers with which nature has furnished them, and every other kind of fruit tree, to accomplish the end for which they were created, namely, to bear fruit ; and, I reckon, they will produce short stiff branches for that purpose. But a peach tree trained against a wall, in this country, is quite a different thing. A gentleman is at a great expense in building garden walls, and it is required that the trees which are planted against it cover as much of the face of the wall as possible, so that every part of it may return annually some part of the original outlay : and, if short pruning is not resorted to, this cannot be effected ; for, without it, the trees would soon become naked in the centre, and this nakedness would spread progressively as the tree advanced in age. Of this, too many of the trees in England bear incontestable proofs.

I said above, that much depended on soil and situation ; and, before I proceed further, I will submit a few observations on these points. Peach trees planted in a strong-bodied soil, on a clayey subsoil, will generally be inclined to produce gross long-jointed wood, which frequently does not ripen ; and those growing in a weak soil, upon a substratum of gravel or other porous matter, have quite a different appearance : here the wood is moderately stiff, short-jointed, and generally ripens well ; and such is to be preferred for bearing fruit before any other sort. Low situations, which are often sheltered, confined, and damp, are likewise generally productive of grassy, long-jointed wood ; and moderately high, exposed, and dry situations produce short-jointed fruitful wood. Hence the necessity of choosing (where the choice is to be had) a situation for these trees (and, in fact, most other fruit trees) which is not too much confined and damp ; and, where the border intended for them is not naturally drained, to lay under it a sufficient quantity of real draining materials, and not to make the border of a too strong-bodied soil.

If it is taken for granted that the most suitable wood for producing fruit is short-jointed and stiff (say from one eighth to three sixteenths of an inch in diameter), it remains to be considered how a regular supply of such wood is to be obtained, so far as pruning, &c., may effect it, where the soil and situation are not favourable for it on trees that have been some time established. In this case, transplantation, where the trees are not too old, may be most judiciously resorted to for *once* ; not so much for the purpose of the immediate checking of the tree as for repairing the substratum, and reducing the strength of the border by adding sand, &c. : were

it possible to avoid it, I would not have a fibre damaged, more than their being necessarily out of their element for a few hours would damage them. This would check the tree sufficiently for one year; and, in future, it would remain moderate, in consequence of the arrangements in the border, and the pruning to be treated of. I should not reckon upon a full crop of fruit the first year; because, if the young branches were generally luxuriant, it is probable they would not set much fruit; and, on any part that might be weak, I should not allow any fruit to remain. In pruning, I should leave the branches thin, and shorten those which were vigorous to about two thirds of their natural length, and those that were weak to one third. In summer pruning, I should leave no more shoots than I should calculate upon wanting in the ensuing spring, except where the branches were luxuriant; there I should leave rather more, according to vigour. Where a young shoot was luxuriant, I should treat it as Mr. Newington does, in stopping it, but would take off the superabundant shoots before autumn. My reason for this is, those shoots which were wanted would be more exposed to the influence of the sun and air, and ripen better. As soon as the leaves began to drop in the autumn, I would thin off the ripest of them, by sweeping lightly over the leaves with a few sprigs of birch tied on a stick: this gives the wood a better opportunity of ripening. Allowing the future fruit-bearing branches of peach trees sufficient room and exposure to the action of the air, is generally too little attended to. This is, probably, in a great measure, the fault of the confused manner of training: but more of this hereafter.

When the trees are in an unfavourable soil and situation, and have got too old to be transplantable, and make wood too grassy to be fruitful, I would in that case, as in the other, lay in the young branches very thin. I am aware that this position will appear rather paradoxical at the first glance; but, when it is considered that strong branches not bearing fruit so well as weak ones is not so much by reason of their vigour as of their *immaturity*, the discrepancy will vanish: for, by their being thin, and properly exposed to the action of the weather, they will ripen much better; and thereby, although strong, a crop of fruit may be obtained by leaving them a good length at the next spring pruning, except where a supply of wood is wanted. By their being thin, a greater quantity of young shoots, for fruit-bearers in the following year, may be left at the disbudding season, which will be pretty moderate. When the tree has carried one or two crops of fruit the point is gained; for we rarely see a fruit-bearing tree luxuriant.

The borders of such trees require to be kept poor : much dung encourages excrescent shoots. Now, what *worse* would the trees be if the border were lightly cropped with early potatoes, dwarf peas, French beans, &c. ? I say, nothing *worse*, but *better*. Mr. Newington says, it is a sure mark of a bad cultivator to see the fruit-tree borders cropped with vegetables. He says the trees should not be vigorous, yet he will not allow vegetables to draw a little of the nutriment from the border. How is this ? Early vegetables, on the open ground, must be had, and are generally more esteemed than any other ; and if they must not be raised on the peach borders, what other means are the majority of gardens furnished with so desirable for that purpose ? I unhesitatingly assert, that lightly cropping these borders is in conformity with nature, harmless, economical, and convenient.

Therefore, Mr. Newington may mark me down a bad cultivator. He may remove his trees as often as he pleases, and I shall never say he does wrong, provided he does not try to persuade others to do likewise, and dub them “ bad cultivators ” if they do not follow his precepts. The practice, at Hylands, of removing the trees annually is, I take it, chiefly for the purposes of preparing the dung-bed, repairing the paper frame, and obtaining early crops in succession, in places too confined for healthy trees ; and, by this practice, they obtain annually half a crop, as the trees are at work one year, and resting the next to recruit their strength. But I do not condemn the plan : I can allow others their fancies, if I am allowed mine ; and mine would be, to have healthy, well furnished, established trees, both on the walls and in the house ; and, for successions of early fruit, of “ just enough and nothing to spare,” I should have small compartments. I should not be nice about the mode of heating. I would have the border both inside and outside the house, the front wall upon arches ; the trees planted inside, and trained nearly parallel with the glass, and about 18 in. from it. Somehow, I cannot fancy that these *portable* trees at Hylands are either healthy, handsome, or well furnished.

But you will be tired, Sir, of my zig-zag track ; and I confess that, when I set out, I did not intend taking so wide a range : but the fact is, when I get on my hobby-horse, there is no knowing where I shall stop. I am afraid, Sir, your patience has been tried in following my rambles in this hasty ride ; but, I trust, if I have not kept a direct path, you will do me the justice to believe that I have all the while been endeavouring to point out the high-road — truth ; and I hope I have stumbled upon something worth marking. I will now

“pull up,” and take a peep at peach trees in perfection : such I shall find at Carlton Hall gardens, under the management of Mr. Seymour. Here is a perfect system, which encourages health, uniformity, regularity, beauty, and utility. When the border is properly made, healthy young trees planted, and Seymour’s system closely pursued, the trees will rarely lose their equilibrium. I should adopt it with little deviation in any soil or situation. Here is no confusion of branches by growing over each other ; there are no more than what are wanted ; each shoot has its allotted space, and, as well as the fruit, is agreeably exposed to the influence of the sun and air. By stopping the shoot at the end of the side branch, the juices are retained for the support of the fruit and the shoot intended for a fruit-bearing branch the following year. But to enumerate all the merits of this plan is not my intention, although I would willingly try, if by doing so I could convert Mr. Newington, and those who are of his opinion, to the faith of it. His plan of shortening back the young spray is useful in particular cases ; but, to do it to a considerable extent, he will have *crowds* of younger spray, and cannot avoid *confusion*, both of which ought to be avoided on fruit trees of every kind. I wish he had been with me when I visited Carlton, in August, 1825 ; I am confident he would have been satisfied, had he seen only one tree (I mean a peach tree), which covered 45 ft. of a ten-feet wall. It was then in a state never to be forgotten by any gardener who beheld it. The fruit, which was ripening, was of the finest description, and standing as regularly all over the tree, at about 1 ft. apart, as if it had been stuck on at measured distances ; there was scarcely a bare piece of wall as far as the tree extended ; from the trunk to the extremities of the branches the succession shoots were equally good from one end to the other. Is it not worth while going fifty miles to see such a tree ?

I hope Mr. Newington will not take any offence at what I have said, as I have not intended any ; and if I have been troublesome to you, Sir, I am sorry for it, and I will endeavour to be more careful in future. I am, Sir, &c.

Howsham, March 16. 1830.

J. CRAIG.

ART. XIX. *On the Treatment of the Peach and Nectarine during the Summer Season.* By Mr. WILLIAM SEYMOUR, late Gardener to Henry Preston, Esq., Moreby, near York.

Sir,

AMONGST the various communications in your useful Magazine, there appear to be many complaints of the bad ma-

nagement of the peach and nectarine, and few offer any regular plan for their improvement. I here take the liberty of contributing my mite along with the rest of your correspondents. I conceive, from what I observed in the south of England last summer, and from former observation, that the greatest error is in the summer management. I will endeavour to give an account of our treatment of the trees at that season, and leave it to you and your readers (should you think it worthy of being laid before them) to judge as to its merits or demerits.

In the spring, as soon as the young shoots have grown to about an inch long, we begin to disbud or thumb-prune them, by taking off all the young shoots where there is no blossom or fruit, except the lowest one upon the bearing branch, and that at the extreme point of it: this end shoot is allowed to grow about 3 in., and is then stopped; and the buds by the fruit all broken off to about four of their bottom leaves, so as to make a cover for the young fruit until the time of thinning, when those little spurs are taken away with the fruit that is not wanted, and the others are retained along with the fruit that is left. By so doing, we are only growing the shoot that we shall want next year for bearing fruit, which gives our trees an opportunity of extending themselves, and making good wood; but not so strong as Mr. Newington describes (p. 55.), except in the centre of our young trees (figs. 79, 80. in Vol. II. p. 295.), which are growing in a soil nearly like that complained of by Mr. Errington (p. 54.): in which case we find little inconvenience; for, instead of taking off the summer laterals or water-shoots (as they are sometimes called), as is generally done, we lay them in at regular distances, the same as we should a natural spring shoot; and, if they do not bear fruit the next summer, they will produce fine bearing wood for a future year; so that we have not to shorten those strong shoots, but lay them in their whole length for main or secondary leading branches, as we have at this time shoots laid in, above 6 ft. long, of last year's growth, with fruit upon their laterals.

When the young shoots at the base of the fruit-bearing ones, or the extending part of the leading branches, have grown 4 or 5 in., they are tied down to the other branches as close as they will admit without breaking or pinching them, and kept close to the wall through the summer. By this means they will get perfectly ripe and firm, and not be so luxuriant as when permitted to grow from the wall almost wild; and the fruit must, of course, be larger when the wood is thin than when it is permitted to grow twice as large as is necessary.

436 *Training the Peach and Nectarine on low Walls.*

There will be found, when disbudding, at the base of the shoots, small buds that are not likely to make a shoot that season; but they must be retained, as they will produce a shoot in a future year, and then bring your young wood nearer home.

I remain, Sir, &c.

Carlton, May 20. 1830.

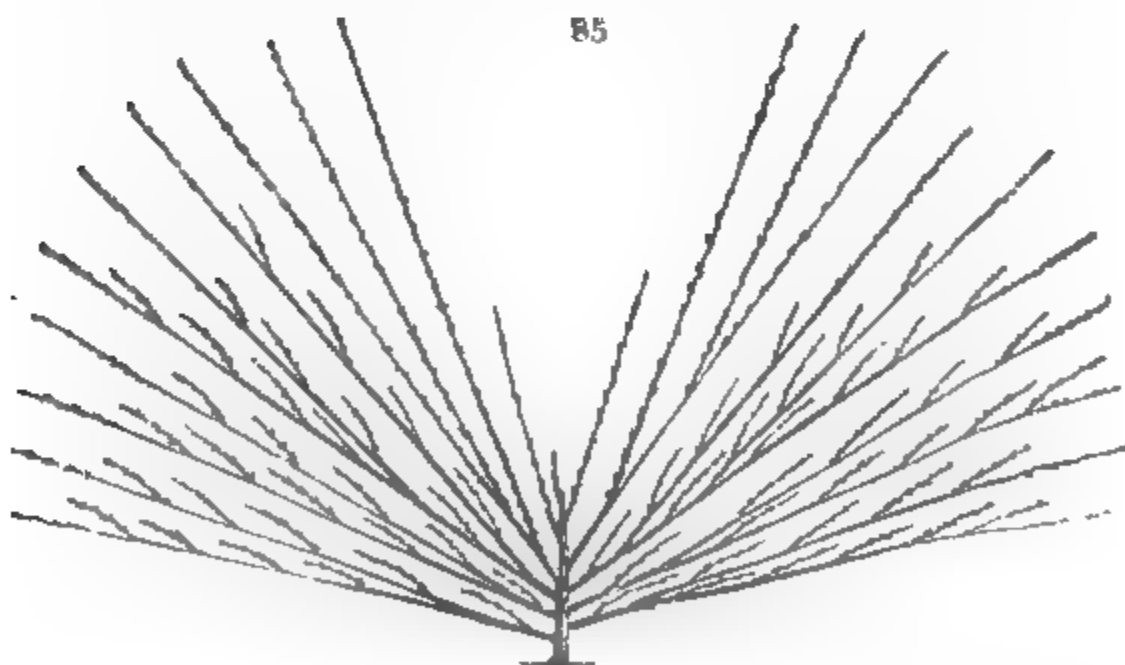
WILLIAM SEYMOUR.

ART. XX. *On a Method of training the Peach and Nectarine on low Walls.* By Mr. WILLIAM SEYMOUR.

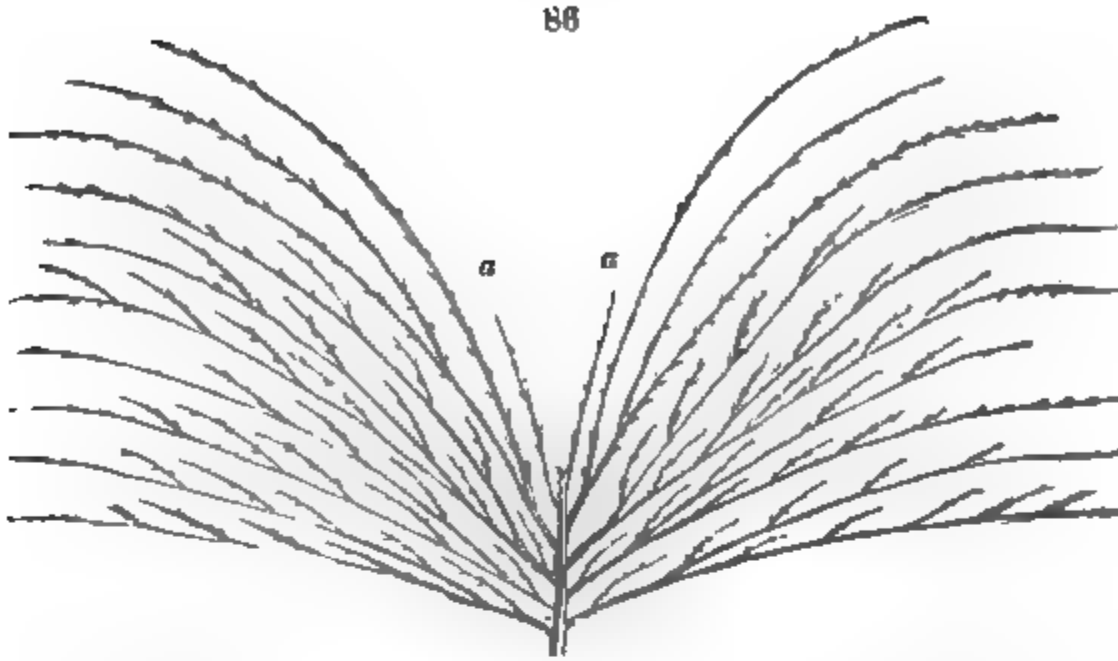
Sir,

I PERFECTLY agree with Mr. Kendall (Vol. II. p. 140.) respecting the necessity of adopting some regular method in pruning fruit trees, particularly the peach and nectarine: but I must beg leave to differ in opinion respecting our [the Seymour] method being so well adapted for horizontal training on low walls; for I am inclined to think that that method is not at all proper for the peach or nectarine on low walls, owing to the liability of these species of trees to lose large branches, which, when it happens when the tree is old, and against a low wall, renders it impossible to replace them.

The method which I here offer for training on low walls is, to take a maiden plant, and to treat it in the manner described in your Magazine (Vol. I. p. 129., and II. p. 295.), so as to produce a tree in the form of *fig. 85.*; and when it has



grown too large for the wall, it may very easily be changed in figure, in the manner of *fig. 86.* By these means the



fan, curvilinear, and horizontal style will be combined, and the gardener will be prepared, in case of an accident, because any of the branches produced from *a a* may be made leading ones.

I remain, Sir, &c.

WILLIAM SEYMOUR.

Weddington, June 3. 1827.

ART. XXI. *Farther Notice of the Pine Plants at Castle Semple, planted in a Bed of Soil.* By JOHN HAY, Esq.

Sir,

I EMBRACE this opportunity of giving you the following extract from Mr. Lauder's letter of the 18th of January:—
“The pines planted in a bed of soil, in one of the steam-pits, on the 18th of March, 1829, although but the previous autumn's suckers, are now the largest and finest-looking plants of any in all the houses: they are far superior to any of the same age grown in pots in the common way, and form a striking contrast when compared with them. From what I have seen of their progress this last summer, I shall not now hesitate about planting the whole of the other steam-pit in March next, with a view to fruit them in 1831; and I shall plant it next autumn with suckers immediately from the stools, without potting them, to fruit in 1832. Should the fruit be in proportion to the size of the plant, they cannot fail to be fine, one of the small early-planted suckers having, soon after it was put into the bed, started into fruit, and produced a fine pine-apple, which swelled well, and, when cut, was found to be very juicy and of excellent flavour.”

I have written Mr. Lauder my views of the treatment of the plants, in order to the proving of them regularly in the ensuing spring; and, should he be as successful in this case as in growing the plants, I shall endeavour to send you a specimen of the fruit, which, I think, Major Harvey will not refuse me. I intended to have asked him before I wrote you, but, he having sent me notice to pack the fruit accompanying this, as it must be sent off to-morrow, I had not an opportunity of seeing him.

I give you the following extract from Mr. Lauder's letter, as a final answer to your query to Mr. Neill, about the best substance for plunging pots of pines in, in steam-pits: — "I found the thermometer, in the bed of soil, generally 2° , and sometimes 3° , higher than one plunged at the same depth among rotten leaves; and 4° , and sometimes 5° , higher than one plunged at the same depth among gravel, all in the steam-pit. The heat was frequently in summer as under: —

" Soil	-	-	-	92°	Soil	-	-	-	93°
Leaves	-	-	-	90	Leaves	-	-	-	90
Gravel	-	-	-	87	Gravel	-	-	-	88

"When the steam was withheld longer than usual, the thermometer among the gravel was the first that got lowest; but, on the other hand, when the steam was applied longer than usual to the pit, the gravel was soonest heated. Since my return from Edinburgh, I withheld the steam from the pit for several days, until the thermometer plunged to the same depth ranged as follows, on the morning of the 6th of Jan. :—

" In the bed of soil	-	-	-	80°
Among the rotten leaves	-	-	-	79
Among the gravel	-	-	-	74

"On the above day, I let the steam into the pit for about four hours, and the thermometer ranged, the three following days, without any more steam, as follows: —

" On the 7th	{	Soil	-	83°	8th	{	Soil	-	85°	9th	{	Soil	-	85°
		Leaves		82			Leaves		83			Leaves		83
		Gravel		90			Gravel		88			Gravel		80"

It appears, from the last trial, that Mr. Lauder has stopped too soon from making his observations: he ought to have continued them until the heat in the bed of soil, as indicated by the thermometer, had sunk lower than 85° . This, however, is the degree of heat at 1 ft. deep in the earth, during summer, in Grenada, as a gentleman, a planter there, wrote home for my information. The thermometer in the steam-pit was plunged 9 in. deep. From the above trials, I think it evident

that stones or gravel is the best substance for heating by steam, in a close chamber; and that earth is the best substance for plunging the pots in.

I am, Sir, yours, &c.

Edinburgh, Jan. 22. 1830.

JOHN HAY.

ART. XXII. *Some Account of a large Vine at Sellwood Park, the Seat of Michie Forbes, Esq., Sunning Hill, Berkshire.* By Mr. H. CUMMING, Gardener to Mr. Forbes.

Sir,

THE large Black Hamburg vine at this place was brought from Sion Hill gardens, then the Duke of Marlborough's, in 1810. It was then a small plant, which had been struck that season from an eye, and it was planted in Sellwood Park garden in 1811. For the first year or two nothing very remarkable was noticed in its growth, more than that it had a very healthy appearance. About the fourth or fifth year after planting, it had nearly filled the small house it was in. The house was then lengthened 20 ft., and in about two years afterwards it had nearly supplied it with strong healthy bearing wood. The house was then again, and has been since, lengthened. The present length of the house is about 90 ft., breadth 13 ft.; number of bunches on the vine 1100; and it is intended to have the house lengthened 36 ft. more next autumn. To show the vigour of this remarkable young vine, I may mention that, when three years ago the house was lengthened an additional 35 ft., the second year afterwards the shoots reached to the end of it. It is a remarkably good bearer, producing a fine large dark berry of an excellent flavour. Many of the bunches weigh upwards of 2 lbs.; some cut last year almost 2½ lbs. It stands nearly in the centre of the house. It has a beautiful straight stem, upwards of 6 ft. in height; and then branches off each way horizontally, with nine principal leading shoots.

The mode of training, and fine healthy strong appearance of the vine, together with the excellent crop of grapes which it produces every year, excite the admiration of every gentleman and gardener who comes here; and the vine, on the whole, is allowed by them to surpass that at Hampton Court, or any other vine in the country. Its roots may be said to be both in and out of the house; as it is planted inside, but, the front wall being on arches, many of the roots are in the old asparagus beds in front. We have already begun to

remove these beds, and shall continue to do so yearly, till our young beds, which have been lately planted, come into bearing; as we purpose to devote that piece of ground entirely to the nourishment of the vine.

With the permission of Mr. Forbes, I have sent you a small sample of grapes, and I can assure you that the bunches were not picked, but cut from one part of the vine and not 2 ft. from each other.

I remain, Sir, &c.

H. CUMMINGS.

Sellwood Park, October 21. 1829.

THE berries were large, dark, of excellent flavour, and the bunches weighing from half a pound to a pound and a half. —
Cond.



ART. XXIII. *On a Method of obtaining new Kinds of Potatoes.*
By SOLA'NUM TUBERO'SUM.

Sir,

HAVING noticed in your useful publication several communications relative to that useful and now almost indispensable vegetable, the potato, I beg to offer a method of obtaining new kinds, which is as follows, viz.: —

Macartney's Method of obtaining new Kinds of Potatoes from Seed. — “ Sow the seed in a hot-bed, about the middle of February, in lines 6 in. apart, a quarter of an inch deep, and very thin. When water is necessary, sprinkle it between the lines, but avoid wetting the plants, as that would injure them. A little air must be given before they are watered.

“ As the plants rise, rich earth, carefully put between the lines, will add fresh vigour to them; but the tops of the plants must not be covered by these mouldings, which should be occasionally repeated until they are fit for transplanting. To prepare them for this, about the end of April they must be plentifully refreshed with air; and, two hours before removing them, they must be plentifully watered *all over*, and the glasses covered with bass mats, to prevent the sun, if shining at the time, from scorching the plants. Take each plant up carefully, with a ball of earth attached to it, and plant them in trenches, as you would celery, only with this difference, the distance from plant to plant in the lines must be 18 in.; and if the sun should be shining out strong at the time of planting, a flower-pot should be placed over each, to prevent flagging; for, with all your care in taking up, a good many of the fibres will be broken. After the plants have

established themselves, remove the pots, and earth up occasionally, as long as the space between them will admit of it. The produce of new kinds of potatoes raised in this manner is generally prodigious for twelve years afterwards. The best manure is yellow moss and rotten horse-dung."

Now, Sir, I beg to observe, that I have tried the above method of raising new kinds of potatoes, and found it to answer my most sanguine expectations. In the year 1807, I selected a seed-ball of an early variety, which I obtained from the late Mr. James Dickson of Covent Garden, well known to the botanical world, and, after washing the seed clean from the pulpy matter which surrounded it, I kept it in a dry place till the time directed for sowing. I planted seventeen plants, and threw away the remainder: each plant produced a distinct variety, of as various quality. There were amongst them round, oblong, and kidneys; good, bad, and indifferent; black, white, and red; all full grown the first season, and of ample produce: some were as early as the parent plant; while others, again, were very late. We have, it is true, a great variety of capital kinds of this useful vegetable; but if gentlemen's gardeners, who have it in their power more than any other class of men in the kingdom, were to set about earnestly raising new kinds, it is very probable that far superior kinds to any of those now in use might be obtained at a trifling expense, as a single-light box, with a few linings, would answer the purpose, after it had performed its office of raising cucumber plants for the larger frames: and such a course of experiments by different individuals, if successful, would not only tend to benefit the country at large, but it would also afford a solid satisfaction to the minds of those who would give themselves such a trifling degree of trouble, if they were successful in obtaining a distinct variety, that would, from its valuable properties, obtain celebrity.

Should you deem the above account worthy of the notice of your readers, I may perhaps, at a future time, when leisure permits, send you one or two more recipes that might be of service not only to young but to old gardeners.

I began to fear we had lost the effusions of our amusing old friend Agronome, but I am glad to see he has made his appearance again. Many hearty laughs have we had at his gibes, and long may he continue to furnish them for the amusement of your readers, together with his pithy useful information: but I must conclude, or, as our worthy friend observes, I shall become tiresome. I am, Sir, &c.

SOLA`NUM TUBERO`SUM,

Neath, Glamorganshire, Dec. 5. 1829.

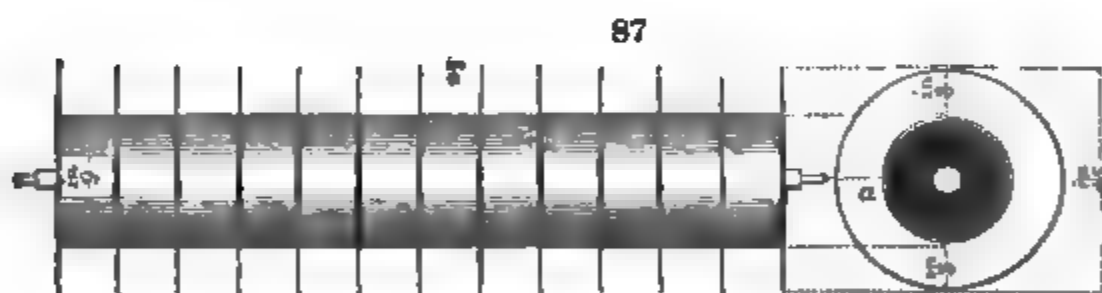
ART. XXIV. *Description and Use of Bartlett's Cultivator.*
By W. D.

Sir,

I SEND you enclosed the plan of an implement of agriculture invented, and most successfully worked, by Mr. G. Bartlett, a most respectable and exceedingly ingenious tenant of Sir Richard Vyvyan, Bart. It will, I am fully confident, when known through the medium of your Magazine, be generally approved of. On lands of a strong adhesive nature, where, in consequence of wetness, the roller and harrow cannot reduce it suitably for the reception of the seed, Bartlett's cultivator will be found to be eminently advantageous. This cultivator can be so modified in principle as to serve every purpose in the preparing of wet land for tillage. The implement has a roller of thirteen sharp plates, placed at intervals of about 4 in.; consequently no lumps of earth over which the cultivator passes can exceed in magnitude the distance of one plate from the other. By the addition of plates, it can so operate upon the surface as to supersede the necessity of the harrow or roller; either of which, in wet seasons, on many lands, is of more injury than service. Mr. G. Bartlett has found it save about one half of the labour, which alone is sufficient to recommend its adoption on all farms of difficult culture in wet seasons.

Trelowarren, near Helstone, in Cornwall,
May 20. 1829.

W. D.

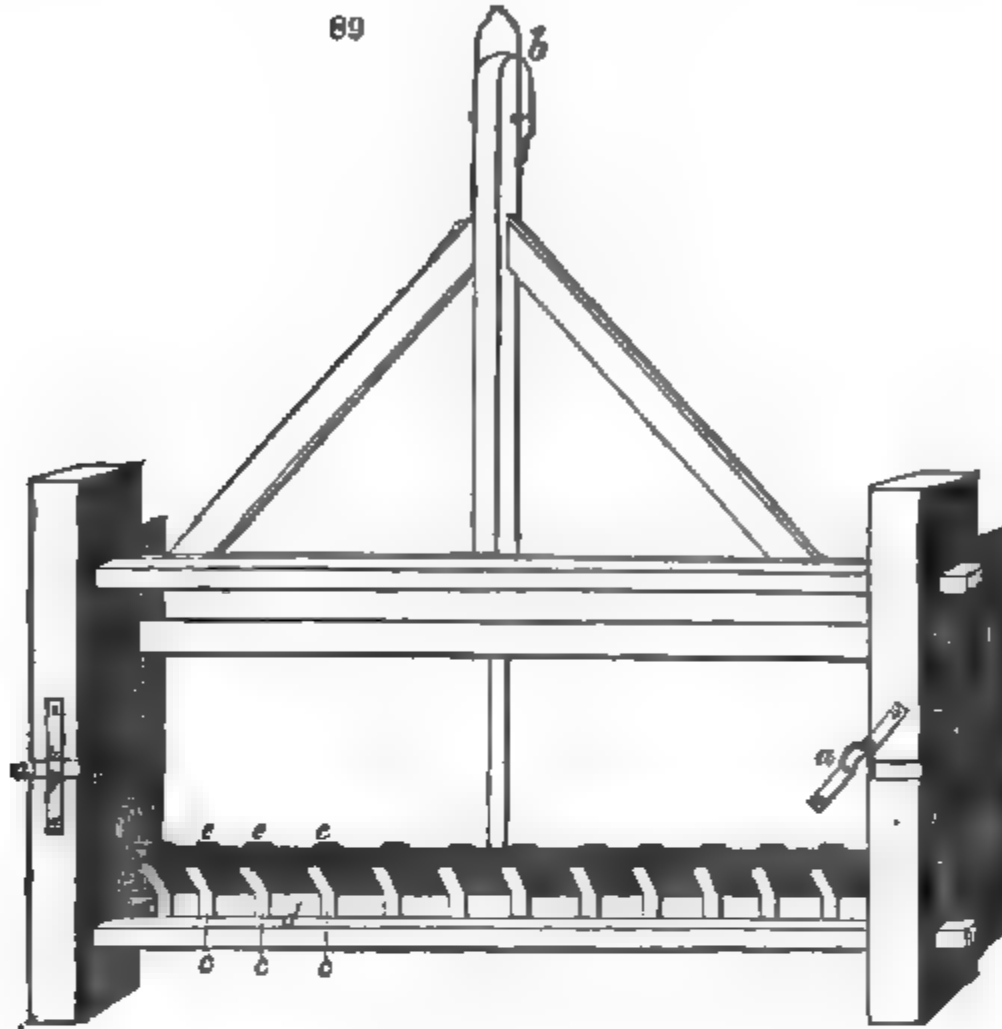


BARTLETT'S cultivator consists of a roller (*fig. 87.*) composed of thirteen thin iron plates, each fastened to a circular block of wood of 4 in. in thickness, and bound round with iron. Both plates (*a*) and blocks (*b*) are movable on an iron axle, and the size of both (*fig. 88.*) may be increased or diminished at pleasure. Mr. Bartlett has adopted a diameter of 9 in. for the blocks, and 15 in. for the plates, as may be observed by the dimensions in *fig. 87.*



Fig. 89. is the under side of the frame in which the roller

is fixed; *a a*, the position of the axle gudgeons; *b*, movable staple for attaching the draft trees; *c*, iron scrapers fastened



to the bar *d*, the use of which scrapers is to clean the roller, and they are of such a length as almost to touch the blocks. Each scraper is protected by a piece of wood (*e*), to prevent it from being forced back by the earth on the roller. These pieces of wood are fastened to the bar *f*, as the scrapers are to the bar *d*. The general appearance of the roller when at work will be easily understood. (*fig. 90.*)



Though we have no doubt that such a machine as the above may occasionally be found useful, yet we are averse from recommending agricultural implements or machines which are at all complicated. Wherever the soil and climate are favour-

able to aration, almost every description of culture may be effected by the plough and harrow alone, and at most with the addition of the roller, horse-hoe, and probably a sowing-machine of some sort. The first agriculturists in the world, those of East Lothian, have nothing more. Wet adhesive lands, whilst wet, can seldom be worked to advantage with any implement; and, indeed, it must be owing chiefly to some local circumstances, that in these times such lands can at all pay for being kept under the plough. Were trade in corn free, or this country thoroughly intersected with rail-roads, such lands would be kept under grass or wood. Every invention and attempt at improvement ought, however, to be recorded for the benefit of future inventors. — *Cond.*

ART. XXV. *An Account of some Plants of Indian Corn raised at Hampstead, and of some remarkable Circumstances connected therewith.* By X. Y.

Sir,

THE following short account of some Indian corn raised at Hampstead may perhaps be interesting to your readers, particularly as it proves that the seed will produce vigorous plants after it has been kept several years; a fact which has often been denied or doubted: —

Sept. 28. 1820, an ear of Indian corn was gathered at Dijon, in France; it was small, being only 5 in. long, and it contained 300 grains. April 20. 1826, some of these seeds were sown in a garden-pot which was kept in a sitting-room of an equal temperature. At the end of a fortnight, the plants came up, and were occasionally put out of the window when the weather was fine. On the 19th of June, they were transplanted into a warm border in the garden, sheltered from the north and east winds. The ground was previously well manured with dung. The plants, after their removal, soon began to grow very luxuriantly, and produced several fine ears of corn, much larger than the ear we brought from France. The largest ears were 8 in. long, weighed nearly a pound, and contained from 500 to 600 grains.

In 1827, I planted the seeds in garden-pots, as before; some from the last year's crop, and some from the French seed. They both came up about the same time, but the plants from the new seed were rather the stronger. The ears were as fine, and ripened as well as they had done in 1826.

In 1828, I planted some seeds of the produce of the preceding year in the open ground, and found that they throve

better than those first sown in garden-pots and transplanted. Last year (viz. 1829) the ears were large, and full of embryo seeds; but, owing to the wet weather at the time the male flowers were in bloom, there were very few perfect seeds, and none of the ears ripened. Owing, probably, to the ground being so much manured, the plants in 1827 were particularly vigorous; and, after the male flowers were out of bloom and the pollen dried up, several side shoots appeared, which, I have since learned, should have been taken off, as they weaken the plant, and seldom ripen. However, I suffered them to remain on; and I was much interested in watching the curious provision of nature to secure the fructification of the seed of this second brood. When the ears of corn began to enlarge, a branch of male flowers, about 4 in. long, grew out of the end of each ear, as the crown or top grows out of a pineapple. In due time these ears ripened, but they were small and ill-formed.

Still later in the season, a third brood appeared; and here nature had another wonderful contrivance to provide for the safety of the seed. As the weather began to be cold and ungenial, the male flower grew from the bottom of the ear, *within* the glume or envelope, like two children lying side by side in a cot. Most of these ears proved abortive; a few perfect seeds, however, were formed, though it was too late in the year for them to ripen.

I should wish to know whether similar changes in the blossoms of Indian corn have ever before been noticed. Such an extraordinary adaptation of means to an end seems to partake of the nature of instinct in animals. By what foreknowledge could the male flower be aware that it was born too late in the season, and thus provide for itself a warm covering, secure from wind and rain? A solution to this question might form the subject of a very interesting physiological essay. I shall anxiously look for an answer to these queries from some of your scientific correspondents.

I remain, Sir, yours, &c.

Hampstead, Jan. 12. 1830.

X. Y.

It thus appears that the seed of Indian corn will retain its vegetative powers, in temperate climates, for six years, with no other care than that of keeping it dry. We can vouch for all the facts in the above communication, from our personal knowledge of the excellent, amiable, and philosophic-minded authoress of the paper, and cultivator of the corn. We hope due attention will be paid to her queries by our physiological readers. — *Cond.*

PART II.

REVIEWS.

ART. I. *A Series of Facts, Hints, Observations, and Experiments on the different Modes of Raising, Pruning, and Training Young Trees in Plantations.* By W. Billington, Superintendant of the Planting of the Royal Forest of Dean, &c.

THIS book is composed by a well-meaning good-natured sort of a man, evidently little accustomed to wield the pen. His "series of facts," however valuable some of them may be, are rather loosely arranged, and mixed up with much digressive and extraneous remark. The history of the rearing of the fences at Dean Forest exhibits little that is creditable to the projectors. The large banks of earth often gave way; and, "sometimes, only the outside turf slipped down, and did not, in the least, disturb the live hedge of whins." "The sheep and cattle, by grazing on the outsides of the banks, on soils of a loamy nature inclining to clay or marl, pulled up the grass that grew between the layers of turf, by the roots, which caused them to crumble down like clay, marl, or lime." (p. 6, 7.) This result might, we conceive, have been *à priori* expected; and, in place of the managers confining themselves to one form of fence in all soils, and that form, too, the least of all adapted for general practice, it would have been easy to vary the form of fence to suit the nature of the soil. On soils where the turf was full of small roots, the form of fence specified by the contract, though of itself sufficiently clumsy, and perfectly inadequate, without a top-rail, to keep out sheep while the whins were young, yet, when they were up, might, with their assistance, form a tolerable fence. The bank contracted for was "to be made 4 ft. 6 in. wide at bottom, 5 ft. high, and 2 ft. wide at top; and care was taken to build them entirely of turf, cut thin, from 3 to 4 or 5 in. thick, according to the nature of the soil; and a ditch 18 in. deep on the outside, a row of furze or whins to be sown on the top, and another at the foot of the banks outside." To this form, for universal practice, we have several objections: and, in the first place, it robs too great a breadth of the adjacent ground of its surface soil. Suppose the medium thickness of the turf to be 4 in., every linear foot of such fence will require $16\frac{1}{2}$ cubic

feet; which, multiplied by 3, for turf of 4 in. thick, will uncover a breadth of 48 ft. 9 in. all along the line of fence, depriving the trees, in many instances, of the only portion of the soil in which they could vegetate. On dry light soils, the upper part of the bank would be too dry for the upper row of furze forming an effective hedge: cattle would have too easy access to the bottom and sides of such fence, unless it were protected; and, if the value of the brushwood used is taken into the account, the expense might very nearly construct a more substantial fence altogether. We have frequently adopted the form, but not the *dimensions*, of the Dean Forest bank-fence, where we were forced to have the line of fence on ground sloping to the interior of the plantation from such fence; in all other cases, we have found the '*ditch and faced dike*' fence the most economical, durable, and effective. The ditch 6½ ft. wide at top, 3 ft. deep, 9 or 10 in. wide at bottom; the turf built to the same slope as the side of the ditch, and 3½ ft. high, including a green turf at top, backed by the earth which comes out of the ditch; a row of whins sown on the top, inside the turf, and some seeds sprinkled in the face of the dike in course of building. A simple rail about 8 in. above the top turf, projecting outwards, and without any offset exceeding 3 in. where the dike commences, will form an effective fence against sheep; and cattle cannot browse to any hurtful extent, as the bottom of the ditch is too narrow to admit of their turning their face to the dike. The turf taken off the top of the ditch will build the faced dike, and the earth will afford sufficient backing. On this ditch bank are seen the best and most forward trees in the plantation, in place of having 48 ft. inward of stunted plants. The expense, too, of such a fence is a consideration: 1s. 6d. will fence 6 yards of the dike and ditch, and about another 6d. will cover the expense of railing, where every thing is to purchase, estimating labourers' wages at 2s. per day of 10 hours. (See *Encyc. of Gard.*, § 6820.) We are better pleased with the method adopted, as a *dernier ressort*, by Mr. Billington, of planting 'wet land.' — "The lines were laid down, as usual, at 4 ft. apart; a good turf, 16 or 18 in. square, as thick as the soil would admit, laid with the grass side downwards a few months before planting: the two swards rot, and the sod becomes firmly fixed, so that they can be planted with the greatest ease, without disturbing the sod." This, however, by some modern writers, would be termed "a Scotch shift," though not practised in that country. Effectual draining we hold to be the first requisite in planting. Had this been properly attended to, and the surface of the swampy soils in Dean Forest pared and burned, there

would have been no occasion for the 'sod system;' there would have been less cover of rank herbage for mice, under which to perform their "deeds of darkness," and fewer seeds for their sustenance; there would have been less waste of labour, and less waste of criticism on the mode of conducting that labour. It appears that the 'fern' (*Pteris aquilina*, we presume) was a great annoyance in Dean Forest. This plant sends its roots more than a hundred feet deep into the soil, and, consequently, is not easily eradicated; it is, however, easily kept under while a plantation is young; and is, withal, one of the best indications we know of a soil suitable to the growth of oak and elm. We fear "Sir Henry Steuart" will not think the following extract quite 'scientific:'—"Because large plants, when removed, if they are not well cut in, pruned, or divested of a great part of their branches, are much longer before they make fresh shoots, if ever they do." (p. 69.) We think the baronet and Mr. Billington are, on this subject, at the extremes of the question at issue. We would say, in removing a tree, be as careful of the roots as possible; but as, with the greatest care, some roots will be hurt or destroyed, remove an equal proportion of the branches, to preserve a fair equilibrium between the leaves and roots; or, as Mr. Billington remarks, "probably the bark, sap, and air-vessels get hide-bound and contracted for want of their usual supply and circulation of nutriment." (p. 69.) His mode of pruning larch nurslings, by cutting the branches about the middle, where they interfere with oak or other permanent wood, is entitled to the attention of those who have the management of young plantations; but, for an account of the superior growth of larch trees so pruned, we must refer to the work itself. The simple plaster of cow-dung, which he recommends for wounds in trees, we have always considered as equal in merit to the far-famed Forsyth's plaster: and, upon the whole, although the book is not well got up, we believe it contains many sensible and useful remarks.—*A. G. Perthshire.*

ART. II. *The Practical Planter; containing Directions for the Planting of Waste Land, and Management of Wood: with a new Method of rearing the Oak.* By Thomas Cruickshank, Forester at Careston. Edinburgh, 1830. 8vo. 12s.

WE see trees of a huge size on the open lawn, or by the way-side; and, not recollecting, perhaps, of any thing having been done for them, are apt to imagine that wood wants little

or no attention to rear it to perfection. To fence a piece of ground, and merely to "stick in the trees," are, too frequently, all that are thought necessary. Hence the miserable appearance of many woods and plantations in the kingdom; and sometimes the opinion that planting is an unprofitable undertaking.

Were the subject more generally understood, and the most judicious schemes acted on, it is easy to anticipate the improved appearance, and increased value, of many neglected districts of the country; for there is hardly a vacant corner, or a heathy waste, which will not produce valuable crops of trees of one kind or other. One can hardly think of a more extravagant or a less rational scheme, than planting the same kinds of trees in every variety of soil and situation; yet we find writers of professed experience recommending the larch and oak to be planted universally. Indeed, the chief part of the art lies in adapting the kinds of trees to the quality of the soil and the peculiarity of the situation.

Perhaps at no former period of our history has the subject of plantation been more anxiously discussed than of late years. Some of the authors are persons of rank and title, and some are professional; but it is matter of regret that conflicting schemes have been advocated, and experience has been made to support directly opposite principles.

A number of authors have recommended raising the oak from the acorn, without transplanting; while others have maintained that the only way to obtain a thriving oak wood is, by using stout plants, several years old, from the nursery. Both these classes have advised their oaks to be from 10 to 7 ft. apart, that the land might be sufficiently stocked for a full crop. Another, though not a numerous, class, have talked of a much smaller number — 17 to an acre! These, however, they propose to increase, as may be required, merely by layering!

But most writers agree on the advantages of pretty close planting, and gradual thinning. There are some who maintain that there is only one sort of Scotch pine indigenous to North Britain; and affirm that Scotch nurserymen brought a spurious variety from Canada, not more than fifty years since, which now pervades the whole kingdom! others consider the whole of that story without foundation. Some recommend carefully cutting off the snags and dying branches from the boles of all the trees of the pine and fir tribes; while others condemn all pruning of pines and firs as certain destruction to the trees. Some will have their hard-wood trees pruned up with a clean stem, and a bushy head; others wish the boles

of their trees to be furnished with small branches and twigs, and the top moderately thinned out, to let the leader get up. On this hand, we are directed to cut every competing branch at once off, close by the bole: on that, we are advised to shorten, and wait till the bole increase to such a size as to envelope the branch so shortened, that the evil of an abrupt termination of the layers of wood, at the amputated place, may be prevented!

Here we are informed, that the best way to season larch wood, and keep it from warping, is to bark it a year or two before cutting it down. There, again, that the only way to season wood of every kind, and give it hardness and solidity, is to immerse it in water immediately on taking it down.

In the sizes and ages of the plants, the time of planting, the manner of pitting, the preparation of the land for receiving the plants, and the effects of that preparation on the quality of the timber when it comes to maturity, the opinions are conflicting and perplexing.

Without pretending to account for these discrepancies on the subject of raising timber, we feel no difficulty in attributing them, in most cases, to hasty conclusions, drawn from ill-digested premises. Hence, imaginary improvements are made known, which lead the public astray, as the *ignis fatuus* does the bewildered traveller, till he finds himself involved in a quagmire of difficulties.

Not a few of the late authors on planting discover a very culpable ignorance of the writings of their predecessors: an acquaintance with which might have enabled them to correct their own mistakes and erroneous notions, and also have prevented them from bringing forward much redundant matter, and making themselves ridiculous in the world.

The professed object of the last publication on planting (Mr. Cruickshank's *Practical Planter*) is, to teach the world "a new method of rearing the oak." That its author should have imagined the method he recommends as "new," can only be accounted for from his total ignorance of almost every book on the subject of raising timber. Indeed, the identical method of creating shelter for the pits of oaks which he speaks of, is circumstantially detailed in Nicol's *Planter's Kalendar* (p. 192—195.), a work which made its appearance in 1812.

The methods of raising oak timber from acorns without transplanting, and from transplanted trees, have each their advantages and disadvantages. We have a curious contrast of these in the work before us (p. 235.): on the common "method of cultivating it [the oak], the person who plants scarce ever lives to see it arrive at a bulk large enough to

render its timber useful for any of the purposes for which oak is required. But," adds he, "let it be treated according to the above directions, and, in 30 or 35 years after the acorn is put into the ground, the tree will be in a state of maturity to qualify it, not, perhaps, for becoming the principal timbers of a large ship, but, at least, for boat-building, and all lighter and more minute parts of naval architecture."

What he can have meant by this piece of composition it is not easy to say: but, if we follow his "directions," that is, to leave 500 of his larch and pine nurses on each acre of his oak wood, till they are from 30 to 35 years old, it will be marvellous enough if his oaks, of nearly the same age, should be fit for the minutest purposes he speaks of. Scotch pine and larches, 30 to 35 years of age, will have risen to 40 or 45 ft. in height, and their side-branches will have met: so that his young oaks from the acorns, from 27 to 32 years old, must be in the worst plight either for cutting for the purposes of "naval architecture," or remaining for forming a crop of oak timber on the land.

Perhaps he may be inclined to say, in this case, what he does in another, namely, "It is but fair, however, to allow, that, on this point, my opinion is founded rather on a careful calculation than on actual experience;" and, we think, it might be very appropriate, with the exception of the word "careful." Indeed, his experience in the forest seems to be confined to a very short period; for, its whole length he fixes at fourteen years, which, he says, were chiefly employed in the nursery.

Had the author not informed us to the contrary, we should have said that most of the matter in his book, on general planting, was a desultory collection from the *Planter's Kalendar*: but it is made to appear that he had never seen that work in his life; nor ever learned anything of its contents till his book was written, and, most likely, in the press.*

However, there are many useful observations in its first

* "Since writing this work, I have learned that the plan of raising oaks from the acorns, in the spots where they are intended to remain, has been recommended by authority far superior to mine, viz. by Dr. Yule in the *Horticultural Memoirs*, and by Mr. Sang in the *Planter's Kalendar*." (p. 209. note.)

At p. 28. "certain English writers" are condemned, and Pontey and the *Encyclopædia of Gardening* quoted. Now, on the supposition that the arboriculture of the *Encyclopædia* was read, which it must have been in order to write p. 28., how can Mr. Cruickshank plead ignorance of what is therein stated from Sang, Yule, and others, respecting raising the oak from the acorn, till after he had written his work? The *Practical Planter* and its honest author must cut rather an awkward figure till these blunders are publicly acknowledged and cancelled. — E. D. G.

part ; and its second, being a transcript of a part of Sir Henry Steuart's *Planter's Guide*, speaks for itself.—*E. D. G. June 12. 1830.*

The above we received from a correspondent, after we had completed the following review. We have omitted E. D. G.'s remarks on Mr. Cruickshank's misrepresentation of two passages in our *Encyclopædia*, wishing to bear the responsibility ourselves of what we shall have to state on that subject.

WE learn, from the dedication, that this work is the result of experience chiefly acquired in the service of the Earl of Fife ; and, from the preface, that the author was led to publish, by hearing frequent discussions regarding the cause of the failure of the oak in Scotland. He has produced, on the whole, a useful practical book, more especially for the north of Scotland : but it is one half too large ; and, if the author had confined himself to his own experience, instead of abridging Sir Henry Steuart's method of giving immediate effect to wood, treating of wood in pleasure-grounds or gentlemen's seats, of the property and uses of timber, &c., and, what one would least expect, setting forth claims to originality for what had been recommended a century before, his work would have merited unreserved commendation : but, then, it would not have contained more than 150 pages, instead of 440. This is the reigning vice of all books (our own among the rest) ; and the excuse is, the necessity of living and tax-paying. One great fault which we find with the author is, that of not having done justice to those who preceded him on the same subject. Sang's edition of Nicol's *Planter's Kalendar*, in our opinion by far the best work on practical planting which Scotland has produced, and which contains all that is of most value in the work before us, is only slightly noticed in the note quoted in last page. Reid is not mentioned, nor Gordon, who, in his *Planter's, Florist's, and Gardener's Dictionary*, Edinburgh, 8vo, 1774, recommends, for large plantations, "to plant acorns where they are intended to stand, putting two or three into each hole," &c., and grubbing up the weakest afterwards, in the terms of our author. Not to mention English authors, therefore, there is nothing new, among Scotch authors on planting, in the proposal to raise oak woods from the acorn. That there is nothing new in Scotch practice, we have only to refer, for proof, to the *General Report of Scotland* ; to the *County Reports*, from which that is taken ; or to the art. *Wood*, in Martyn's *Miller's Dictionary*. To be particular, we shall refer to the *Gen. Rep. Scot.*,

vol. ii. p. 269.; and to our *Encyc. of Gard.*, 2d edit. § 6828.; and *Encyc. of Agr.*, § 3645. What Mr. Cruickshank calls "a new method of rearing the oak," is, planting the acorns in plantations of pines, firs, or other trees, of 3 or 4 years' growth, in order that they may be sheltered during their infancy: a very excellent mode, and particularly well adapted for the north of Scotland; but which, as it has been long practised at Welbeck in Nottinghamshire, and in the New Forest in Hampshire, is, at least, not new in England. Having pointed out what we consider faults in this work, we shall now proceed to the more agreeable task of indicating its most valuable passages.

In the introductory remarks on the advantages of planting, the hackneyed subject of providing timber for the navy is dwelt on. It seems that, if our foreign intercourse were cut off, our oaks fit for the navy would be completely exhausted in the course of four or five years. In our opinion, it is a matter of no consequence whether our oaks will last two years or five years: while the country has money, oaks, or a substitute, will be found in abundance; and cheaper far than they can ever be grown by government in national forests. We see no more reason, therefore, for recommending the culture of wood, in a national view, than we do for recommending the growth of wheat or potatoes on the same grounds. Our author argues with more effect when he recommends planting waste lands, at present producing only heaths, or a very scanty pasture; and he has the merit of having shown, in a more forcible manner than any writer that has preceded him, that "planting may even be used as a means of preparing uncultivated land for agricultural improvement."

"It may seem a very paradoxical fact, but it is nevertheless true, that wood, instead of impoverishing the ground on which it is produced, enriches it. There is very little of our waste land that, if trenched or ploughed, will carry even a moderate crop of grain, unless it receive a considerable quantity of manure. After bearing timber, however, the contrary is found to be true.

"On a rising ground, not far from the village of Ellon, a piece of ground of a dry gravelly nature, which had been lately cleared of a crop of full-grown Scots firs, was trenched in a very partial and imperfect manner, the roots of the trees being scarcely eradicated. It was then sown with oats, without receiving either lime, dung, or manure of any other description: yet the crop was so luxuriant that a great part of it lodged. The following spring the ground was again sown with the same species of grain, without receiving any enrichment; and, when harvest arrived, the crop was unequalled by that of the richest fields, in a neighbourhood which is generally considered as fertile. The experiment was tried a third time, still without manure, and the return was again considerably above an average. The soil, as has already been remarked, was dry and gravelly, and far from possessing any natural qualities that could have been the cause of such extra-

ordinary productiveness. When planted, it had been covered with heath, and in that state had not been superior to those waste lands which we occasionally see improved at a vast expense, and which will produce no kind of crop till they receive a great quantity of manure.

“Those who have never had an opportunity of seeing old woodlands brought into cultivation, will scarce credit what has now been advanced. That the soil should be enriched by the production of wood, when the experience of ages has proved that it is always exhausted by other crops, will seem to them a paradox of the most extravagant kind. If such readers, however, will be at the trouble to give a little attention to the following suggestions, the fact may appear to them much less unaccountable.

“Trees draw their nourishment from a much greater depth than any of the grasses, roots, or different kinds of grain raised by the agriculturist. Most of the latter derive the whole of their subsistence from the part of the soil that lies within a few inches of the surface; but the former, from the superior strength and magnitude of their roots, are enabled to penetrate much farther, and extract food from the very rock which forms the substratum of a great proportion both of our cultivated and uncultivated grounds. This, though it does not account for lands being positively enriched by wood, makes it, at the same time, far less surprising that trees should grow to a larger size, and yet not exhaust the upper part of the soil in so great a degree as most of the crops cultivated by the farmer.

“There is another circumstance which gives ground in wood a great advantage over that in tillage, which is, that the leaves of the trees are suffered to decay and rot where they fall; and, by this means, an annual addition is made to the depth of the vegetable mould. Now, the leaves of a tree may be considered as bearing the same proportion to the trunk and branches, in respect of the nourishment which they require, as the straw of corn bears to the grain: but the manure which cultivated land receives is, in general, little more than the straw which grows on it after it has served for food or litter to cattle. Ground in wood, then, actually receives, in the annual fall of the leaves, as much enrichment as the farmer bestows on his land under tillage.

“Ground employed in agriculture is exposed, at almost every season of the year, to the full action of the atmosphere, and in the drought and heat of summer much of its strength is evaporated. In land covered with wood the case is entirely different; as, from the shade afforded by the leaves and branches, very little evaporation takes place. This, then, is another reason that serves, in some measure at least, to explain the seemingly paradoxical fact in question; for, that evaporation has a very powerful tendency to exhaust a land, by drawing off and dissipating the more volatile part of the matter which assists in the process of vegetation, there can be no doubt, when we consider that any kind of dung may be deprived of the greater part of its strength by being long exposed to a dry atmosphere. Nor is it merely by preserving its own original substance, that land in wood has the advantage of cultivated ground. Whatever is extracted from the latter in the form of vapour, falls again, when condensed, in the shape of rain or dew; but, instead of descending wholly on the same spots from whence it rose, it is of course diffused over the whole space which the clouds containing it may happen to cover; and woods and moss have as good a chance of receiving it, on its return to the earth, as the ground in tillage. The part of it which falls, either on the cultivated fields or the naked wastes, may be again evaporated before it has had time to be productive of any benefit; but the portion of it which the woodlands imbibe is retained to enrich the soil; for, the umbrage excluding the rays of the sun, there is no possibility of its being extracted a second time. Land covered with trees, therefore, while it never loses any thing, receives, with every fall of rain or of dew, a tribute from the riches of the cultivated part of the country. The advan-

tage derived from this source is greater than will be credited by those who are not aware how much of the substances proper for vegetable nutriment are exhaled from the land, in a gaseous state, during the dry season of the year.

“ But the principal way in which wood becomes instrumental in enriching land still remains to be noticed. When trees attain a certain size, they attract multitudes of birds, which build their nests and seek shelter among the branches. The dung of these animals is the very richest kind of manure which can be applied to land, and possesses at least three times the strength of that commonly used in agriculture. The quantity of it produced during the long series of years which trees require to reach maturity, is, especially when large colonies of crows take up their abode, very considerable, and must have a powerful influence in improving and fertilising the soil.” (p. 17.)

The foregoing extract is the best and most original argument for planting waste grounds which we have ever seen, since it applies to all times and all countries. The writer, elsewhere, shows that waste lands in Aberdeenshire may be planted with the Scotch pine, at from 15s. to 20s. per acre; and estimates (but in much too flattering a manner) that 600 [say 300] per acre of these pines will, in 60 years, be brought to such a degree of maturity as to be worth, on an average, 10s. each; while the thinnings, during that period, will more than pay the expense of planting, enclosing, and management, with full interest. Here, then, is a rent of 5*l.* [say 2*l.*] per acre for land, which, in its previous state of heath, as pasturage for black cattle or sheep, was not worth above 1s. per acre.

Among the “errors generally committed in the cultivation of wood,” not adapting the trees to the soil is said, and truly, to be one of the most fatal. Other errors are, giving the same description of culture to every species of tree; treating the pine and fir tribes like the leaf trees, for example: planting at too great an original expense; from 6*l.* to 12*l.* per acre, instead of 2*l.* per acre, exclusive of inclosing the ground: pruning and thinning neglected, or performed on wrong principles. The last error is, “too close attention having been paid to the maxims of certain English writers;” from which, it is said, “considerable mischief has been done, of late years, to the interests of arboriculture in Scotland.” These writers are found “gravely recommending that firs be pruned, and enforcing the direction in the strongest terms that can be applied to such a purpose. A maxim more pregnant with ruin to our fir plantations than this, supposing it generally acted upon, could hardly be expressed in words.” Pontey is the principal English writer who has recommended pruning firs: but, instead of throwing out such an illiberal remark against English writers in general, it would have been but candid to state that Billington, equally an English author, has written

against pruning firs. That Speechly was against it appears from his papers in Hunter's *Georgics*, and Young's *Annals*; and in the last edition of Miller's *Dictionary*, art. *Woods*, not only the general arguments against pruning the pine and fir tribes, but even the particular mode of pruning the hardwooded trees, recommended by Cruickshank, is given:—"No fir tree should ever be pruned, unless to cut off the branches near the ground: all other trees should be pruned with a friendly hand, and only the branches taken away that rival the growth of the trunk: in general, these branches are near the ground." Pontey is blamed because he "tells us that the spruce will thrive well in dry land; meaning, that it will attain a large size in such a situation." Pontey is right in asserting that it will thrive well in dry land (see Vol. V. p. 595., the spruces at Denbighs): but that he ever meant it would attain a large size in such a situation we do not believe; because he uses them only as nurses, and recommends their being cut down for fence-wood, when not too large for being used entire and with the bark on. The bark, we have often heard Pontey say, rendered the spruce fir one of the most durable of trees used in a young state. We agree with the writer, however, that the natural situation of the spruce is low and moist.

"In Loudon's *Encyclopædia of Gardening* we are told that the seeds of the spruce, larch, and Scotch fir should be covered half an inch deep." (p. 31.)

This is incorrect: we have, taking Sang as our guide, directed covering the first and the last half an inch; but the larch only a quarter of an inch. Thinking it rather singular that Sang, who has been a nurseryman all his life, should be wrong, we wrote to him, and also to Mr. Reid of Aberdeen, Mr. Gorrie, Mr. Donald, and others, on the subject. We find, in answer, that by most nurserymen half an inch is considered too much; and, though it was proper to censure us for recommending that depth for the Scotch pine, it was unfair to state that we included also the larch, which we expressly recommend to be covered only one fourth of an inch.

"In giving directions for laying out a nursery, Loudon recommends that earth should be *forced*, as it is termed, in order to obtain soil exactly to suit every species of trees that it may be necessary to raise. This is another English nostrum, the chief use of which seems to be to create expense." (p. 32.)

The author enlarges on the subject in a note, arguing against "scrupulously forming the soil so as to be in exact accordance with the nature of every plant that it may be necessary to raise in it;" as,

"In the first place, to discourage the propagation of trees, by increasing

the expense ; and, secondly, to transgress against that fundamental rule in arboriculture, namely, that young trees should be brought up in the nursery as hardy as possible. To *force earth* will be found, in general, equivalent to forcing the plants ; for the advocates of the practice always mean to enrich, not to reduce, the soil by means of it." (p. 33.)

The whole of this is a piece of gross misrepresentation. In a chapter devoted to "the formation of a nursery-garden for the propagation and rearing of trees and shrubs," we treat of *a complete nursery, a private nursery, and public nurseries*. "In order to have a complete nursery," we have stated, taking Sang for our guide, that it "should contain soils of various qualities, and be not less than 18 in. or 2 ft. deep ; the generality of it should be light, friable earth ; a part of it should be of a clayey nature ; and another part should be mossy." When it is considered that, in a complete nursery, American shrubs, which require peat, bulbs, which require a dry, and fruit trees, which require a loamy, soil, are to be raised, it will not be denied, by any practical man, that the above three descriptions of soil are essential. They are, in fact, to be found in all the principal London and Edinburgh nurseries. *For a private nursery*, we have recommended "a field," "land of a good quality and fine tilth, for the raising of seedlings ;" in short, much the same sort of nursery-ground that Mr. Cruickshank recommends. Speaking of *public nurseries*, we have said nothing about different soils, but recommended cropping the ground in the double character of a kitchen-garden and nursery. The word *forcing*, or any word or words on which that interpretation could be put, we have never used. The writer has conjured up this "forcing of earth" in his imagination, and then attacked it in detail. A reviewer of the work, in the *Quarterly Journal of Agriculture*, seizes on this "forcing system of the nursery," as he calls it, as a feature of English practice, and condemns it as "erroneous in principle, injurious in practice, and the cause of numerous failures in forest culture." This is part of the art of editing and reviewing, when the parties are either ignorant of the subject, or entertain some prejudicial feeling connected with it. It is clear to us, that neither Cruickshank nor his reviewer knows much of nursery-gardening, as practised either in the principal nurseries of England or Scotland.

At the conclusion of the introductory remarks, in which the above misrepresentations are included, the author informs us that "he conceived it to be the duty of every one who undertakes to write on a practical subject, to point out the errors of his predecessors, in so far as he has experience on his side." This is laudable : but, first, totally to misrepresent a

passage, and next, in that guise, to condemn it, is a very different thing.

Chap. I. treats of the “*Various Kinds of Trees, whose Culture is described.*” It commences with the Scotch pine; the remarks on which, we cannot help observing, are much more like those of a professional bookmaker than of a practical planter. As a proof, we give the following concluding sentence: — “If it be true that the fir we now generally cultivate is, in reality, of a spurious and inferior breed, whether originating in Canada or at home, no time should be lost in exterminating it from our nurseries.” The Article of the principal nurseryman at Aberdeen, in a former Number (Vol. IV. p. 315.), we thought, had set this strange story of Sir Walter Scott, in the *Quarterly Review*, at rest for ever. It is there shown that the whole is a mistake: no Scotch pine-seeds are, or ever were, imported from Canada, where the tree is unknown; and that the quality of Scotch pine timber depends on the nature of the soil on which it grows. The author is equally unsatisfactory in his remarks on what the *Quarterly Review* says respecting the two species of oak supposed to be in cultivation. The *Quarterly* reviewer considers the *Quercus Ròbur* and *sessiliflòra* as two distinct species; whereas, the latter name is merely a synonyme of Sir James Smith’s, in *English Botany*, to distinguish it from *Q. pedunculàta*. The latter is supposed to produce timber much inferior to the former; but we believe this to be a mistake, and that the quality of the timber depends much more on the quality of the soil than on the species or variety. The *Q. pedunculàta* produces much larger acorns than the other; and for that reason, as a correspondent in the *Gardener’s Magazine* has shown, is more frequently sown by nurserymen; but we do not think it has been clearly proved that the timber of the one is naturally, and, without reference to soil and situation, better than the other. We never heard of, or saw, a natural oak forest in which they were not mixed together, and in which individuals might not be found containing the peduncles of different lengths, and even sessile; which induces us to believe the two supposed species to be varieties. This is also the opinion of some German gardeners and foresters with whom we have conversed on the subject; for example, M. Hartweg of the grand-ducal garden at Carlsruhe.

Chap. II. *On the Nursery, and sowing the Seeds of Trees*, might, if we were disposed to be severe, be quoted as contradictory to preceding remarks on what he calls the forcing system. For example: —

“In selecting a spot for a nursery, if we cannot find one containing all

the varieties of land best adapted for each kind of plants we intend to raise (and this can seldom be found), our choice ought to fall on one adapted for firs, as the nearest approximation we can make towards suiting all descriptions. It is hardly possible to raise a full crop of seedling spruce, birch, or elder, in land of that degree of dryness which is most proper for the Scotch pine and the larch. If possible, therefore, the nursery should contain a portion of moist land, meaning, by this term, not that degree of wetness which consists in swampiness, or in the water appearing above the surface, even in winter, but what is generally understood by the epithet *damp*. But if no single piece of ground of the requisite extent, or possessing this qualification, can be found, we have no other alternative but either to content ourselves with the more slender crops of the above-mentioned species, which may be raised without it, or have two separate nurseries, the one calculated for plants which prefer a moist soil, and the other for those of a different nature." (p. 60.)

The above passage, so much at variance with remarks about the forcing system, induces us to suppose that the latter are from the pen of an Edinburgh editor. If the author found it necessary to have two sorts of soils, in a private nursery, for raising a few hardy trees, what would he require in a nursery for general purposes, such as we were treating of?

Chap. III. *Purchasing Plants* is recommended to those who plant only to a moderate extent. Chap. IV. treats of the *Soil proper for the different Forest Trees*. The following is valuable : —

"The Scots pine is one of the hardiest trees we possess, and it will thrive in very barren situations, provided they be dry. Dryness is, in fact, the most indispensable requisite that land can possess, in order to produce a good crop of Scots pine; and it is never advisable to plant this tree in very moist ground, or where draining is necessary to carry off the surface water. The soil most favourable to it is, perhaps, a sandy loam, but it will thrive on light soils in general, on a substratum of gravel, or even of solid rock, provided there be as much vegetable mould as to permit it to fix its roots. Gigantic specimens of it are to be seen in the district of Braemar, in Aberdeenshire, in situations where its fibres have found no better lodgement than the chinks and crevices of granite. The finest Scots pines any where to be met with occur in the neighbourhood of the river Dee, in the above-mentioned county, especially in Mar forest, the property of the Earl of Fife; the forest of Glentanner, the property of the Earl of Aboyne; and the woods of Invercauld, belonging to Mr. Farquharson. In all these places the ground is mountainous, wild, and rugged, and the subsoil varies from the poorest quality of sandy loam to gravel and rock, but in no instance that I recollect does it approach to clay. On the banks of the Don, a neighbouring river, where the soil, in general, has more tenacity, the Scots pine is not found in nearly so great perfection. Stiff land, indeed, seems to be decidedly hostile to its growth, as we scarce ever find it either plentiful, or of large size, in districts where clay abounds. It is very impatient of the spray of the sea, and hence comparatively few thriving woods of it occur on the east coast of Scotland. Mountainous regions are its most favourite situations, and in these it will thrive at a greater elevation than any other species of timber, with the exception of the mountain ash and the birch. On a deep rich soil it grows very fast, attains a large size, and soon decays. In these circumstances its wood is spongy, and of inferior value. But, on such land, it is not eligible to plant the Scots pine, what-

ever were the quality of its timber, as there are other kinds of trees which will bring higher profits to the proprietor. The most important precept that can be delivered with regard to this tree is, never to plant it either in *wet* or in *very stiff* land. Whoever wishes to see it in its highest perfection, and to acquire a knowledge of the soil and situation in which it delights, from personal observation, ought to visit the forests of Dee-side.

“Next to the Scots pine, the forest tree most universally cultivated is the *larch*. This is also a very hardy plant, and it is sure to thrive on any land that will answer for the Scots pine. It is, however, less delicate in its choice of soil than the latter, and will grow in a much greater degree of moisture. I have seen fine larch trees on very stiff land, and I understand there are many such in the neighbourhood of gentlemen's seats in the Carse of Gowrie, where the soil is deemed as tenacious as any in Scotland. This tree is one of the surest growers we have in barren soils; and, where a proprietor is in doubt what kind of wood he should plant in any piece of tolerably dry waste land, it is a good general rule to put in a considerable proportion of larches, or rather to make them the staple of the plantation.” (p. 98.)

The spruce fir is as partial to moist land as the Scotch pine is to dry:—

“Nothing possibly can be a greater error in attempting to rear timber than to plant spruce in ground that has not a very considerable degree of moisture. It may, indeed, appear to thrive in a dry situation for a few years, but, by the time it reaches 10 ft. or 12 ft. in height, its lower branches will begin to decay, and, after that period, it will make little progress, but remain a mere cumberer of the ground, as unsightly as it will be unprofitable. If well supplied with moisture, it will thrive better on the most indifferent land, than, without that requisite, it will do on the best of soils. At Counterswells, within five miles of Aberdeen, there were standing, a few years ago, and probably still remain, some spruce trees upwards of 50 ft. high, and without a single withered branch from top to bottom. In shape they presented an exact copy of the cones that grew on them; the branches close at the ground, spreading out to a great circumference, and every succeeding row diminishing somewhat in length, till the conical shape was complete. So thick and close were the boughs, that it was impossible to catch a single glimpse of the trunks. These beautiful trees grew on what had formerly been a perfect morass, the surface water of which had been drawn off by opening large ditches. The soil was peat moss on a bed of poor clay. I may state, in the way of contrast, that I have seen, on dry land, where the larch had grown to a majestic height, spruce, of the same age, not exceeding 15 ft. from the point of the leader to the ground, every branch, with the exception of two or three near the top, being as effectually withered as if scorched by fire. Spruce seems to be most partial to a cold stiff clay; it is, however, a very hardy plant, and not very nice in its choice of soil, provided it have enough of sap.” (p. 99.)

The silver and Gilead firs will answer in the same kinds of land as the spruce. The oak prefers a strong clay, but will grow in sandy, gravelly, and even rocky land; and there are, at Careston, near Brechin, in Forfarshire, some very thriving plantations of oaks, which have arrived at a fair size, on ground so moist as to have produced a good crop of spruce. The oak should not be planted in rocky or in gravelly soils; it is in vain to plant it in poor land, or where there is not a

considerable depth of vegetable mould. It does not answer well in very high situations. A deep loam is its favourite soil. The same may be said of the elm. The beech ought never to be planted either in mossy or in wet ground. Any light dry soil will answer for the sycamore (*Plane*, Sc.). The horsechestnut and the lime thrive on the same soil as the ash and elm. The birch is partial to light and dry soils and elevated situations; but it will grow in the different varieties of clay, and bear a degree of moisture equal to the spruce. Taken altogether, it is the least delicate of British trees. The alder will answer in cold boggy soils, where scarcely any thing else will grow. The willow species,

“ Though proverbial for their love of moisture, will yet, most of them, answer well in land which is not too dry for the elm. Excepting those species which belonged originally to this country, they require a good depth of vegetable mould to bring them to their full growth. A light black earth is most suitable for them, but they may be planted with success in stiff lands of a good quality.” (p. 107.)

All the poplars thrive in the same quality of land as the finer willows.

In cultivating trees, the exposure or aspect is of little consequence; but the elevation is a matter of importance.

“ The trees which reach nearest to the limit of perpetual snow, and within a few degrees of it, are the Scots pine and the birch, reduced, in their nearest approach to this inhospitable region, to the stature of scragged shrubs. A degree or two farther south than this utmost verge of vegetation, the spruce is found at first in a very diminutive state. After it, still farther south, succeeds the oak, then the beech, and, last of all, the Spanish chestnut. The ash, elm, lime, &c., belong to the zone of the beech. In like manner we are told that, at the foot of the Alps, the chestnut flourishes, the beech continues after the former disappears, and the oak rises to a height where there are found no beeches. After the oak itself has vanished, the pine continues diminishing regularly in size, till it approaches the boundary of perpetual frost.” (p. 110.)

Chap. V. *Directions for ascertaining the Quality of waste Land, from the Nature of the wild Plants that grow in it.* Grey lichens indicate the most barren kinds of soil; and such land, planted, will only produce bushes. Coarse bent-grass denotes a stiff poor soil, inclined to wet; fit for the alder, native willow, and spruce, with a few birches. Dry soil, with thick and healthy heath, and without grey moss or bent-grass, “ is capable of producing a good average crop of larch, birch, and Scotch pine. Oaks, likewise, may be planted in it with success; but it is too poor for the ash, elm, beech, or sycamore.” Broom is an unequivocal criterion of superior fertility. The furze or whin springs up on the best, as well as on the worst, of soils: when dwarfish, the soil is poor; when

gigantic, dry and rich. Abundance of fern indicates the most fertile quality of any soil that is to be met with in an uncultivated state. Few trees will grow freely where slate abounds, or over freestone that lies near the surface.

Chap. VI. *Preparation of the Ground for the Reception of the Plants.* The easiest mode of clearing away heath is to burn it. Ploughing in rough strong land, and trenching in barren ground, are preparations for wood “of very doubtful utility.” In a note, the author says : —

“By this it is not meant that trenching of barren land may not accelerate, in a considerable degree, the growth of the trees planted on it. But with regard to firs, especially, it may be doubted whether any advantage can be gained by such acceleration, that is not more than counterbalanced by the timber being deteriorated in quality by this means.” (p. 129.)

We do not think there is the least occasion to be alarmed at any deterioration that can be produced in this way, at least in barren ground ; and we are surprised that a practical man should have countenanced such an idea.

The Scotch pine, all the fir tribe, the birch, alder, and mountain ash, may be removed from the seed-bed, to their final situations, in their second year, as successfully as at any period whatever : not so with the ash, elm, sycamore, beech, and oak ; which, the author says, he is unable to clear up.

“The difficulty is rendered the more hard of solution, from the fact, that all the deciduous trees above-mentioned, with the exception of the oak, which is averse to removal under any circumstances, may be transplanted in thousands and tens of thousands in the nursery, without almost a single failure, at the same age at which, if they are transported to waste land, three fourths of them will perish. The knowledge of the fact, however unable though we be to account for it, is sufficient to direct us in practice ; and plainly warns us, in forming plantations of ash, elm, plane tree, and beech, to make use of such plants only as have stood some time (two years at the least) in nursery lines, after having been removed from the seed-bed.” (p. 135.)

Pitting is the oldest and most generally known system of planting.

“Sometimes one person undertakes the whole operation, and, in that case, he uses a cross made of two small sticks, which instrument is laid on the mouth of the pit to keep the plant in an erect posture, while the earth is put upon its roots. This substitution of a stick for a man is not, however, to be recommended but in cases of absolute necessity.” (p. 137.)

The pitting system should be adopted in every instance in which the plants exceed two years old ; and no other method ought to be attempted when we have to do with the ash, elm, sycamore, and beech. The notching or slit system, of which there are two varieties, was introduced about a century ago ; and is performed by making, with a common spade, two notches or slits, crossing each other ; bending down the

handle while the spade is in the second-made notch, till the first becomes wide enough to receive the roots of the plant. Fifty years ago, the planting-iron was introduced. It is described by Sang as the diamond dibber (*Encyc. of Gard.*, §6845.): "In this way, an expert workman will plant between 3000 and 4000 young plants a day; and do it so perfectly, that the fault will not be his, if a single individual of the whole number fail to grow." It is, at least, six or seven times cheaper than the original mode of slit-planting; "and, in fact, renders planting as economical a process as it seems possible to make it." "I have assisted in planting, according to this plan, upwards of 3000 acres in Aberdeenshire alone." The reader will observe, however, that this system is restricted to the pine and fir tribes, not exceeding the age of two years. Where shelter is wanted, the Scotch pine should be planted as a nurse; sometimes the larch, and occasionally broom and furze already on the ground, may do.

Chap. VII. *Management.* The fallacy of Pontey's assertions respecting pruning the pine and fir tribes is forcibly pointed out: —

"Independently of any other consideration, the very form in which a fir grows appears sufficient to teach us that pruning, if not attended with actual injury, can at least be productive of no benefit to the tree. An ash, or an elm, for example, has a constant tendency, if left to itself, to depart from the shape which constitutes its chief value. It is continually throwing out branches, which become rivals to the leader, and either bend it out of its upright course, or starve it, by exhausting an undue quantity of sap, and thereby disqualifying it for carrying up the tree. Hence the great use of pruning trees of this kind is to protect the leader from the rivalry of the other branches, to the end that as much of the nourishment drawn from the earth may be employed in promoting the growth of the stem, and as little of it expended on the top, a part which is comparatively of little value, as is consistent with the laws of vegetation. But, in the case of firs, this use of pruning has no place. Their horizontal branches never interfere with the leader, nor obstruct its progress in the smallest degree. It always, unless broken accidentally, or killed by the frost, appears above the most elevated of the horizontal shoots; and they, instead of injuring or supplanting, seem to assist it in keeping its perpendicular position, as those of the same elevation grow of equal length all around it, and produce a perfect equilibrium. Hence it would appear that the pruning of firs, supposing it harmless, can yet be productive of no positive good, so that to practise it would be to labour and lay out money for no end; a species of industry and expenditure which deserves any epithet but that of rational.

"Harmless, however, the process in question is far from being, and I have known more than one thriving fir plantation utterly ruined by it. Mr. Pontey tells us, that it is the cutting off too many branches at once that causes injury, and that, if we take away only two or three tiers at a time, no bad effect will ensue. Let any person remove this number of living branches from a Scots fir, or spruce, of seven or eight years old; let him, at the same time, ascertain its height, and mark some of the plants contiguous to it, which are exactly of the same size. By measuring it and them three years afterwards, and comparing the progress of the former, made in this

interval, with that of the latter, he will have a practical demonstration of the utter fallacy of Mr. Pontey's assertions. The taking off of a few branches will not, of course, be so injurious as the displacing at once of a great number; but none can be displaced, as the above experiment will show, without materially retarding the growth of the plant." (p. 163.)

The author's principle of pruning deciduous trees amounts to this rule: *Never displace any branch which has not already got, or which does not seem in immediate danger of getting, the start of the leader, whether these branches proceed from the lower or upper part of the trunk.* We think this rule the most unexceptionable that has ever been given; and we should wish it impressed on the mind of every forester, together with that of not pruning the pine and fir tribes at all. It does not follow, speaking with reference to the deciduous trees, that unthriving branches, whether large or small, should not be cut off; but we would certainly leave all branches on pines or firs to decay off of themselves. If, in the case of deciduous trees,

"Any branches that were left at a former pruning low on the stem appear, at the next repetition of the process, not to have increased in size, we may safely conclude that they have had no influence on the tree, either good or bad; and as it would be in vain to leave them with the hope that they will any longer assist in the elaboration of the sap, they should be removed, as unsightly objects, which it is no longer useful to preserve." (p. 168.)

In removing a branch, he cuts close to the stem, without leaving any stump; using knives of various sizes, a chisel, and a saw, always kept sharp, and in good order. "On no pretence whatever should bills and axes be employed." They make rough, unsightly wounds, and injure the bark on the stem. Pruning ought to commence in the nursery, if the plants remain there more than four years; and, at whatever age they are removed to their final destination, pruning should never be delayed longer than five years afterwards. "When many branches require to be displaced at once, it may always be taken for granted that the tree has sustained considerable damage from some of them not having been removed sooner; and, when we have to do with a large plantation, if we wait till the most backward of the trees stand in need of pruning, we may assure ourselves that the more forward ones have suffered severely from the want of it." (p. 171.)

Pruning ought to be repeated every two years, and persevered in as long as a tree is in a growing state. Summer pruning has been strongly recommended, but the author has not had much experience of its good or bad effects.

Thinning, to be useful, should be applied early. "The best rule, and one, perhaps, that may be regarded as entirely

unexceptionable, is, to commence the process as soon as the branches of different trees begin to run foul of, and interfere with, one another." When more trees require to be thinned out than can be brought to an advantageous market in one season, cut off all the branches of the trees to be taken away, and leave them standing till wanted by purchasers. To thin out large trees from among smaller ones, without injuring the latter, adopt the following mode: — Fix a rope

"At such a height on the top of the tree intended to be cut down, that the weight of the part below may considerably exceed that of the part where it is made fast. The ends of the rope are then to be tied firmly round the trunk of some one of the neighbouring trees to windward. By this contrivance, the tree which has the rope fixed amongst its branches, will, when cut through, instead of falling to the ground, remain suspended, and may be easily guided to whatever side may be requisite to keep it from injuring any of its neighbours in coming down. The rope being then untied, the tree will prostrate itself harmlessly on the earth." (p. 178.)

When thinning has been delayed till the trees have suffered considerably from want of air, the application of it will then be productive of harm rather than good. In the case of pines and firs, it is better to let the stronger trees make room for themselves by destroying the weaker.

Chap. VIII. *Culture and Management of the Oak.* It seems there is a general prejudice, among nurserymen and professional planters, that the climate and soil of Scotland, or at least that certain principles existing in them, are hostile to the growth of the oak. The erroneousness of this opinion is proved by reference to native oak woods, by the oak timber-work in old churches and baronial residences, and by the remains of oak found in peat mosses. The failures in the attempts to raise the oak have originated in this erroneous opinion. These failures may be traced chiefly to two causes: the circumstance of the oak being a tap-rooted plant, and by no means agreeing with transplantation; and the tenderness of the young shoots of the oak which require shelter. The oak, therefore, instead of being transplanted, ought to be raised from the acorn, in the place where it is intended to remain. This, as the author acknowledges, has been recommended by Dr. Yule, in the *Memoirs of the Caledonian Horticultural Society*; by Mr. Sang, in the *Planter's Kalendar*; and, we may add, by Evelyn, Miller, Hunter, Speechly, Billington, Emmerich, Marshall, Gordon, and a number of other writers: and it has been practised in the royal forests of Hampshire and Dean, at Worksop, Bulstrode, Gartmore, and on various private properties. In Germany, the oak is almost always raised from the acorn, planted where it is finally to remain. Some of these names and places are mentioned or referred to in the *Ency-*

clopædia of Gardening, art. Arboriculture; and we would ask Mr. Cruickshank, how it has happened that, while he found in that work the alleged error in respect to nurseries, he did not also find Yule, Sang, and the other authorities there, in favour of raising the oak from acorns put in where they are finally to remain?

The author agrees with Pontey, "that an indifferent soil, properly sheltered, is capable of producing more oak timber than a good one without this advantage." Subordinate causes of failure are, neglect of pruning, and suffocation by surrounding trees. The "new method of rearing oak" is, first to provide shelter by filling the ground with the Scotch pine or larch; or, "what is still better, with a proportion of both." The plants may be two years old, and put in at the distance of 4 ft. from each other. No acorns are to be planted until the pines or firs have risen to the height of about 4 ft. from the ground, which will require from 4 to 7 years. The manner in which these nurses will screen the oaks from the wind is evident; but less so how they prevent the bad effects of perpendicular frosts.

"To explain this, it may be necessary to state, that the deleterious effects of spring and autumnal frosts arise chiefly from the leaves being subjected to a sudden change of temperature, from the freezing chill of the night to the strong heat of the rays of the morning sun. When the thaw takes place gradually, the injury done is comparatively insignificant. Several undoubted proofs of this can be adduced. Agriculturists have found, by long experience, that their crops are never so much hurt by frost, when the sun rises clouded, and rain succeeds, as when the night is followed by a morning of bright sunshine. And it always holds good, that corn which is shaded from the first rays, by wood or otherwise, is never so much injured as that in other parts of the same field. The late Rev. Dr. Skene Keith, in his *Agricultural Survey of Aberdeenshire*, recommends that, in situations much exposed to autumnal frosts, belts of trees should be planted along the east side of the field, to ward off the early rays of the sun. 'In many cases,' says that writer, 'the rays of the morning sun may be, with propriety, excluded, by a belt of plantation in the east; for, though these are friendly to an early harvest, yet, in an unfavourable or late season, if a mildew or rain in the evening be succeeded by frost at night, and if the sun dart his rays in the morning on the wet corn, when in flower, or on the peas, beans, or potatoes, before they are fully ripe, the effects are generally fatal. The only remedy, namely, that of two persons going very early, with a rope, between the furrows of a ridge, and shaking off the rain or dews, cannot be practised on a large scale, though it may save the potato crop of the industrious cottager to know this, and put it in practice, when he sees the hoar-frost in the morning. A more permanent remedy is, to have a small belt of planting on the east, to prevent the sun's rays from injuring the crop, which is usually dry before the sun appears in the south-east; for the danger is over as soon as the moisture of the night is dried up.' (*Agricultural Survey of Aberdeenshire*.)" — *Prac. Plan.*, p. 224.

The art of preserving young oaks, then, consists in shading them from the morning sun, in spring and autumn; and this

cannot be better done than by surrounding every plant by trees somewhat higher, either evergreens, like the Scotch pine, or trees which produce their leaves earlier, and have a thick close spray, like the larch and other frondose trees. Two thousand of the pines and larches may remain on each Scotch acre till they are 16 years old; one half may then be cut down, and the remainder may remain till they are 25 years old; one half of these may then be cut, and the last 500 may remain till they are from 30 to 35 years old. These nurses will now have returned the whole expense of making the plantation, together with a high rent for the land during the first 30 or 35 years.

Where plantations of pines or firs exist of a greater age or height than those mentioned, the oaks may be introduced, whatever be the height of the nurses, provided the branches have not become so close as to shut out the air from above; or provided the nurses be so far thinned as to reduce them to this state. Deep ravines, valleys surrounded by high mountains, dells, dingles, and steep banks of rivulets or streams, ground covered with furze or broom, hazel or birch, may be planted with acorns, without planting nurses.

“For the reception of the acorns, let the following preparations be made: — Mark off a patch of 2 ft. square, notch it round with the spade, and trench it 1 ft. deep; using an earth-pick or mattock, if the hardness of the ground require it, and throwing out all large stones. Proceed in this manner till the requisite number of patches be formed, letting them be 10 ft. distance from one another, by which means there will be a few more than 500 of them in the superficies of a Scots acre. In land which is very stony, it will be sometimes impracticable to make the distances between them completely regular; but this is a matter of little importance, provided the inequalities be not great, and nearly balance each other.” (p. 227.)

“Before proceeding to plant the acorns, get some lime in readiness; slake it thoroughly with water, in the same manner as is customary when it is to be used for agricultural purposes, and spread as much of it as can be lifted on a common spade upon each patch. Then dig it in, neatly levelling the ground. As soon as a patch is thus prepared, plant in it five acorns: one as nearly as possible in the centre, and the other four forming a square of 1 ft. each side around it, and cover them 1 in. deep with earth. Proceed thus till the whole be planted. To avoid deception from bad acorns, put them, in small quantities, before they are used, into a tub of water. All of them that are sound will sink to the bottom; the others will swim on the surface, and are to be skimmed off and rejected. I recommend five to be put into each patch, because that is the most that will find room for two years, without being too much crowded; for, though one plant only will be ultimately required, it is necessary to make provision against the ravages of mice; which, being very fond of acorns, will devour many of them in the interval between the time of sowing and that of coming up. Besides, accidents may happen to the young plants.” (p. 229.)

The most proper season for sowing is the last week of March, or beginning of April; sown earlier, they are more

exposed to the depredations of mice. The lime will be found to have a great effect in accelerating vegetation. The acorns, being planted, will give no more trouble for two years; at the end of that period, remove the supernumeraries, by cutting them, below the collar, an inch or two under the surface. One man will thus clear several acres in a day. Now, and every two or three years afterwards, look round and see that, when any branches of the nurses overshadow the oaks, the plant from which it proceeds be immediately cut down: where branches do not overshadow, they do no harm, and may remain. At 5 years old, give the oaks their first pruning, and look over them every 2 years, till they are between 20 and 30 years old.

“The expense of the lime, for an acre, will be about 3s.; of the acorns, 1s.; and of the planting, including spreading and digging-in of the lime, about 3s. more: so that the total expense will not exceed 16s. per acre.”

If, instead of trenching patches 2 ft. square, a square foot be dug, the cost will be reduced in the ratio of 5 to 1; but this saving at first will be a loss in the end.

In a succeeding section, on the culture and management of succession crops of oaks, the author points out the error of neglecting to provide shelter for the shoots which proceed from the stools. The whole copse “is cut down on the return of the stated period, at one fell swoop, without leaving a single twig that might help to ward off the blighting blasts from the ensuing crop.” (p. 259.)

“An oak-coppice may be kept continually under shelter, by adopting the following very simple plan:—Instead of proceeding as with a field of grass to be made into hay, and laying all flat before us, if we leave standing as much of the coppice as will shade the stools, whose produce is cut down, from the rays of the morning sun, the rising shoots will have abundant shelter from the effects whether of winds or frosts. As soon as these shoots are of sufficient height to shelter one another, the nurses may be cut down: their stools will be sheltered in their turn by the young crop which has just got up around them; and thus the whole will have the advantage of uninterrupted protection from the injuries of the weather.” (p. 260.)

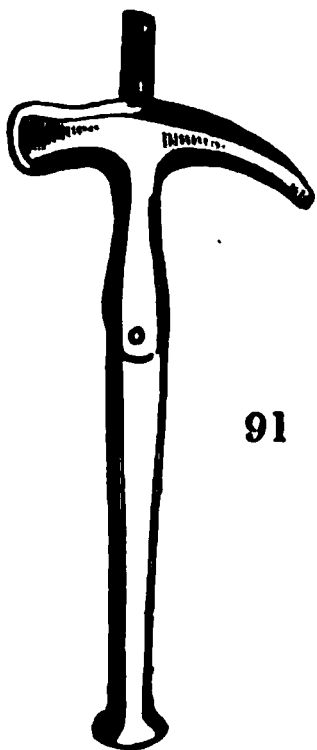
In answer to the objections which might be made by purchasers, to the trouble of leaving one eighth, one ninth, or one tenth of the stools, he would deduct a corresponding portion of the price per acre, and mark each stool to be left by turning up a sod. This trouble would only be required the first time; because, in every after-cutting, the new crop of coppice would always be so far behind the crop to be cut down as to be easily distinguished from it.

Where transplanted oaks have formed, as they generally do,

irregular scraggy bushes, he would, with other practitioners, head them down within an inch of the ground. This, in fact, is the practice of almost all those who raise oaks from transplanted plants; and, though it costs more than the mode of raising oaks by acorns sown where they are finally to remain, we have not a doubt of its being equally efficacious in every point of view. The shoots produced from the collar must be reduced to one. The proper season for heading down oaks, as, indeed, for heading down or cutting-in all trees, is between the fall of the leaf and the period at which the sap begins to ascend. The nearer the former, the stronger will be the buds. As, in performing this operation with a knife, there is some risk of disturbing the roots, the pruning-shears (*fig. 72. d*) may be very advantageously adopted. It is almost ridiculous to hear Mr. Cruickshank talking of the effects of this concentration of the sap in producing a vigorous shoot, as if it were not known and practised by every forester and gardener in the island. He says:—

“Any person who has a young plantation of oaks in a stunted condition, if he doubts the efficacy of the mode of cure here suggested, and is afraid to hazard its consequences on a large scale, may, to avoid all risk, first try its effects on a few plants. The result of the experiment will, I have no doubt, convince him that my assertions are well founded and true.” (p. 266.)

This, indeed, is the sin of the book, an affectation of originality where there is none; and a recommendation of well known practices, as if they were peculiar to himself.



91

Hide-bound oaks may be improved by slitting the outer bark with a sharp knife, or with the slitter or scarificator recommended in the *Memoirs of the Caledonian Horticultural Society*, vol. iv. part ii. p. 395. (*fig. 91.*) Lime Mr. Cruickshank has found very salutary in reviving deciduous trees. It is laid on the surface, and dug in; but a better mode is, to prepare a compost of lime and fresh earth; to lay the roots of the tree bare, and then place this compost in contact with them. It is evident that this mode of improving trees can only be applied on a limited scale, like Sir Henry Steuart's mixture of earth and coal-ashes, and other composts. Query, says Mr. Cruickshank,

“Might not those who have already plantations about their mansions, but of a diminutive size, from badness of soil or otherwise, rapidly produce

all the improvements they could desire, by a judicious use of Sir Henry's composts, without adopting any more of his plan?" (p. 268.)

Chap. IX. *Plants proper for Underwood, &c.* The mountain ash may be sown where it is to remain, and the plants should never be pruned: an objection against its admission into plantations, in the neighbourhood of towns, is, the tempting appearance of its berries to schoolboys! Besides native plants, the author recommends flowers, native and exotic; and, doubtless, in the margins of woods, or in woods penetrated by walks, hundreds of beautiful species of bulbs, annuals, and perennials might be acclimated.

Chap. X. *Succession Crops of Wood.* The author denies that soils can be exhausted by wood. He would plant whatever kind might be deemed fit to succeed the standing crop, among it, as underwood, 12 or 15 years before cutting down. When the large trees were all felled, the young ones, destined to succeed them, may be cut over, within 2 or 3 in. of the ground; with the exception of bushes here and there, which ought to be left for the purpose of shelter. This, of course, supposes that the succession crop consists of trees that will stole. The author repeatedly expresses his surprise "that scarce any attempt should have ever been made to renew hard-wood plantations" from the shoots proceeding from the stools previously cut down. This, he says, is "a fact of a very singular nature." To us it appears very singular that Mr. Cruickshank either does not know, or does not acknowledge, that this is practised in every wood, i. e. in every plantation of hard-wood trees, consisting of timber trees and underwood. Is there not, in such woods, always a constant succession of timber trees, under the name of wavers, saplings, &c., which spring from the stools of trees felled or coppices cut over, as well as of coppice? A succession of a different kind of timber may, we suppose, become necessary after a certain time, since this is the mode employed by Nature; and we should always recommend a change in the case of the pine and fir tribes. The larch seems well adapted for succeeding the Scotch pine; in more favourable situations, the cedar and the silver fir may succeed each other; but the best succession, where the soil admits, would be leaf trees of some sort.

Chap. XI. *Sir Henry Steuart's Method of giving immediate Effect to Wood.* Chap. XII. (printed XX.) *Wood in the Pleasure-grounds of Gentlemen's Seats.* Chap. XIII. (printed XXI.) *Properties and Uses of Timber;* and Appendix on *Draining, Fencing, &c.* The chapters on Sir Henry Steuart, and wooding pleasure-grounds, are particularly ill advised, since they are completely out of the author's way; and, with

Chap. XIII. and the Appendixes, give the work a book-making character, which must injure it in the eyes of all those who, like us, know something of the secrets of the trade.

So much for the naked kernel; those who have 12s. to spare, and leisure, may procure it in the shell.

ART. III. *Catalogue of Works on Gardening, Agriculture, Botany, Rural Architecture, &c., published since June last, with some Account of those considered the most interesting.*

BRITAIN.

Chandler and Booth's Illustrations and Descriptions of Camelliææ, &c. In Imp. 4to Parts, every two months. 7s. plain; 10s. coloured; and 18s. extra-size.

Part III. for June, contains

9. *Camélia japónica Pomponia*, Pomponé or Kew Blush Japanese Camellia. "So much resembles the Pæony-flowered, and various-flowered, as to render it impossible, when they are not in blossom, to distinguish them from one another." Slender and erect in growth; shoots pale, and but thinly clothed with foliage. Imported for the Kew Garden about 1810.

10. *Camélia japónica corállina*, Coral-coloured Japanese Camellia. "One of the many fine varieties that have been raised from seed by Messrs. Chandler, of the Vauxhall nursery," originated in 1819, and published in Chandler's *Camélia Británnica* (G. M. Vol. I. p. 317.) in 1825. Habit like that of the *Waratáh*.

11. *Camélia japónica flore plèno álbo*, Double white-flowered Japanese Camellia. One of the most elegant varieties in cultivation, brought to England, in 1792, by the same gentleman who introduced the double-striped, viz. John Slater of the India House, according to Messrs. Chandler and Booth, but Thomas Slater, according to Mr. Main, who went out as collector for Gilbert Slater (Vol. II. p. 423.) in 1791. One of the varieties most esteemed in this country, as well as in China.

12. *Camélia japónica exímia*, Choice Japanese Camellia; the Chandler's choice-flowering Camellia of the nurseries. Of free growth, resembling in some respects the *Waratáh*; flowers of a deep rose colour, very double, and measure no less than 4 in. in diameter. Resembles *Camélia japónica imbricatà*, or what is called in the gardens the crimson shell-flowered Camellia, lately introduced by the Horticultural Society, but the foliage of the two plants is totally distinct.

The Pomological Magazine. In 8vo Numbers, monthly. 5s. coloured; 3s. 6d. plain.

No. XXXII. for June, contains

125. *The Royal Russet Apple*; Reinette de Canada grise, Fr. "An exceedingly valuable kitchen fruit, keeping to the latest period at which good apples are in use." Hardy, ripening in November, and keeping till May or June. "An important cottagers' fruit, and one which ought to be constantly cultivated for the benefit of that class of persons."

126. *The Winter Nelis Pear*; La Bonne Malinoise, Fr. (Vol. III. p. 353), Bonne de Malines. Raised by Mr. Nelis, of Mechlin, after whom it is named. "An excellent winter pear, in perfection in December and January." "Bears pretty well as a standard, but succeeds much better on

an east wall. It is of very high quality, and will, no doubt, be one day a favourite article of the dessert. In the opinion of some it is superior to the Chaumontelle, — a high character."

127. *The Black Eagle Cherry*. "As good a bearer as the Black Heart upon an open standard, and far superior to that variety in the quality of its fruit: it is not to be doubted that this will one day usurp the place of that ancient variety in our gardens. It was raised by Mr. Knight, from a seed of the Ambrée of Duhamel, impregnated with the pollen of the May Duke; and it really combines all that is most worth praising in both those varieties." "Ripens soon after the May Duke."

128. *The Flemish Beauty Pear*; La Belle de Flandres, Bouche nouvelle, Fondante de Bois, Brillante, Impératrice de la France. "When we consider that this ranks among our best pears in quality, that it bears abundantly as a standard, and that its size and appearance are both much in its favour, it is not to be doubted that it will one day become a most important variety in the lists of cultivators. As yet it is but little known. It is a large-sized, greenish-russet, handsome kind, ripening in October, and keeping for a month or two. It has the remarkable property of improving more if gathered before it is quite ripe, than if fully mature when taken from the tree. In the latter case it is apt to acquire a kind of anise-scent, which is not agreeable; in the former it becomes perfectly melting and rich, without any such flavour." "It must be gathered while it adheres yet firmly to the tree; this is the only way to have it really in perfection. If suffered to ripen fully on the tree, it is a poor variety. It decays externally before it gives way at the core."

No. XXXIII. for July, contains

129. *The Purple Gage Plum*; the Reine Claude Violette of the French, and Die Violett Königin Claudie of the Germans. Fully equal to the green gage in all respects, with this advantage, that it is scarcely at all disposed to crack. Ripe in August, and will keep till October in a dry room; a good bearer as a standard, and improves in flavour on an east or west wall.

130. *The Sam Young Apple*. An Irish variety, highly spoken of by Mr. Robertson of Kilkenny, "than whom few are better acquainted with the varieties of orchard fruit." A flat-headed tree, healthy, and an abundant bearer on all sides; fruit small, depressed, round, eye very wide and open. "Still a variety neglected and almost unknown. Like a great many first-rate fruits figured already in the *Pomological Magazine*, it is hardly to be found in the nurseries; and we shall probably hear complaints of the difficulty of procuring it in the trade. We can only say, that no fruit has been introduced into the *Pomological Magazine* which cannot be possessed by any nurseryman in Great Britain, and which ought not to find a place in every collection having a claim to consideration; but we say further, that those persons who hold a different language, and who do not take the necessary pains to provide their customers with these varieties, are more attentive to their own interests than to those of the public. We have been led to make these observations in consequence of letters that have reached us: we trust that it will not be necessary to repeat them."

131. *The Beurré Diel Pear*. This fruit has been already figured and described from a specimen grown on a wall (see Vol. IV. p. 35.), and a figure is now given from a standard; because the pears so grown "are so extremely different in appearance, as to render it improbable that the identity of the two would be discovered without being thus pointed out." It bears most freely as a standard, succeeds well upon a quince stock, and is one of the most important pears in cultivation. Fruit obovate, large; "flesh inclining to yellow, melting, perfectly buttery, sweet, rich, very high flavoured and excellent."

132. *Hughes's Golden Pippin Apple.* "Very different from the old Golden Pippin, and in many respects inferior to that variety (as what is not?), this deserves to rank among the most useful and beautiful table-fruits of England. It is remarkable for the neatness of its appearance, its rich golden hue (in which it surpasses its rival), and for the great productiveness and perfect health of the trees. It bears most abundantly grafted upon the common English Paradise stock, which is the Doucin stock of the French, and perfectly different, both in appearance and in effect, from the real Paradise of Holland and France."

Woollard, William, Florist, Ipswich: A Catalogue of Ranunculuses grown and sold, 1830. Ipswich. On one sheet, to be sent by post. 6d.

Mr. Woollard's collection is said to be equal to any one in England: it is well known in Suffolk, and deserves the attention of florists in every part of Britain. This catalogue is very well drawn up. Thirty shades of colour, indicated by letters, are employed to describe the sorts, and the prices are added as in Mr. Tyso's catalogue. The highest-priced flower is the Abbé St. André (dark), 50s. The Rose Incomparable (white-edged), 40s.; the Quixos (purple), 30s.: there are scores at every price between these sums and 1s. a root, at which price there are above a hundred.

Billington, William, Author of *Facts, Hints, &c. on Plantations* (p. 446.), 8vo, 1825: *Facts, Observations, &c.*, being an Exposure of the Misrepresentations of the Author's Treatise on Planting, contained in Mr. Withers's Letters to Sir Walter Scott, Bart. and to Sir Henry Steuart, Bart.; with Remarks on Sir Walter Scott's Essay on Planting, and on certain Parts of Sir Henry Steuart's Planter's Guide; also, Observations on the Mode adopted in the Royal Forests of raising Timber for future Navies, and on the Quality of the Timber, as affected by the Trenching and Manuring System, or the more common Method; with some additional Information, Hints, &c. Shrewsbury. 8vo. 1830. 2s. 6d.

Mr. Billington is an excellent practical planter; and we highly approve of his ideas for "shortening" the side branches, as he terms it; "fore-shortening," as it is denominated by Blaikie in his *Tract on Hedge-row Timber*, 12mo. 1819; "cutting-in," by Withers; and "terminal pruning," by Sir Henry Steuart. His ideas on thinning are also of the first order; and no less so his opinion on the important uses of leaves and of light in the produce of timber: but what he has said on all these subjects is enveloped in such a mass of superfluous verbiage, that it is hid like a few grains of wheat in a bushel of chaff. We should wish to see such a valuable practical man actively employed as a forester; for, we fear, he is not likely to do much good, either to himself or others, with his pen. He seems to think that there is a sort of tacit conspiracy on the part of Sir Henry Steuart, Mr. Withers, and others, to, what he calls, "keep him down:" an idea so absurd as not to require refuting. He also seems to think that Sir Henry, and also ourselves, do not much like him, because he is not a Scotchman. He says, "Probably Mr. Loudon had not seen my work when he wrote," &c. &c. respecting pruning. We can tell our worthy friend, that a Scotchman, an Englishman, and an Irishman, are exactly the same in our eyes; and the passage on pruning, quoted by Sir Henry, was written and published in 1806: of course, we could not then have seen Mr. Billington's work published in 1825. But, lest Mr. Billington should think that we are not friendly to him, we shall send the pamphlet to the same gentleman who reviewed his large work, and conclude this introduction by expressing a hope that the Arboricultural Society of Dublin, or some patriotic individual, will speedily call Mr. Billington into active employment.

FRANCE.

Philippa, Fr., C.M.H.S., Member of several Societies in France, and Son of the King's Gardener at the Grand Trianon : *Voyage Agronomique en Angleterre, fait en 1829 ; ou Essai sur les Cultures de ce Pays comparées à celles de la France.* Paris. 1830. 8vo, 20 pls.

The author appears to have viewed such gardens as he saw in this country without prejudice ; but, unfortunately, he has seen so very few, that he cannot have viewed them with much profit, either to himself or to those who may peruse his work. The expense of living in England is so great, compared with what it is in France or Germany, that scarcely any young gardener from these countries can afford to stay long enough to acquire the language sufficiently well to profit from the conversation of gardeners ; then to examine the London nurseries, and other suburban gardens ; and, lastly, to make an extensive tour in the country, to examine our English parks. We can truly say, that M. Philippa has not seen a park worthy of the name. He has devoted one chapter to parks and gardens, by which it appears that he has been at Greenwich, in the Regent's Park, the other London parks, Kensington Gardens, Richmond, and Kew, Syon, Windsor, and Stow. One would be almost tempted to doubt his having been at the latter place, since all that he says of it is contained in the following sentence : — “ The finest gardens that I have visited are those of Kew, Stow, Syon, Windsor, and some others, which differ little from the preceding [Greenwich, &c.], except in extent. A much greater number of remarkable gardens might be cited ; but the very short time that I was enabled to pass in that country hindered me from visiting them so much as I should have desired : I shall content myself, therefore, with speaking only of those in which I remained a sufficient length of time to examine them in detail.” Accordingly, he mentions the more rare trees in the shrubbery at Kew, the larches and hollies in Kensington Gardens, the thorns and Scotch pines in Greenwich Park, and the weeping ashes and rustic seats in Jenkins's nursery in the Regent's Park.

The principal nurseries, and the Horticultural Society's garden, are noticed ; but the principal part of the book is occupied with lists and short descriptions of the plants which he considered rare at Kew, in Messrs. Loddiges', Mackay's of Clapton (printed Blapson), Lee's, Mill's, Malcolm's, &c. The author sought everywhere for the Arracacha, having been charged to bring a plant of it to the royal gardens, cost what it would ; but he could not see one, and could only learn that plants had lived for two or three years at Messrs. Loddiges', and in the Chiswick garden, as, indeed, they have done at the Comte de Vandes's, Bury Hill, Plymouth, and other places, and since died. M. Philippa carried with him a small quantity of London loam, which, on analysing, he found to be composed of the same substances, but in different proportions, as the soil principally used for growing house exotics in the neighbourhood of Paris, which is found at Vitry, Ville d'Avry, and a number of other places, and called *terre de Clamar*.

The 20 folding plates, we are sorry to say, are, for the most part, not well chosen. The zoological garden, street, houses, and gardens, a rustic seat, a group, rockwork, two rosaries, a small kitchen-garden, a square, are much worse than engravings of the same things already existing in France. Some of the hot-houses are from Todd's work, upwards of a quarter of a century old. But we cannot expect that M. Philippa should understand much about the art of book-making. He would evidently have been happy to have staid longer, and seen and learned more ; and we sincerely wish that there might be such an approximation in the means of existence, between the two countries, as would enable us to know each other better in everything. If we are not mistaken, France is now about to set us an

example which will effect what we ardently desire, sooner than many of us imagine.

[The *Annales de la Société d'Horticulture* and the *Bulletin des Sciences Agricoles* appear monthly, as usual. But of late we have had no room for extracts, nor is there much in them worth extracting.

Plantes Grasses, peintes par P. J. Redouté, et décrites par A. P. De Candolle, et J. A. Guillemin. Paris. In folio and in quarto. 50 parts, each containing 6 plates and 6 leaves of letter-press. Price, in 4to, 15 *frs.*; in fol. 30 *frs.* per part or livraison.

ART. IV. *Literary Notices.*

OBSERVATIONS on the present defective State of English Timber, by Mr. P. Lauder of Cardiff, are in preparation, and will shortly be published by subscription. The work will be in 4to, and the price a guinea. The subscription list includes many names of rank.

Lithographic Views, and copious Descriptions of Scenery, in North and South America, New South Wales, New Zealand, and other South Sea Islands, and various parts of the coast of India, will be published, in monthly numbers. The author of the work, Mr. A. Earle, an eminent artist, has devoted twelve years to travelling through these countries. We have looked over his portfolios, and been highly delighted with the original and striking character of the scenery in New Zealand, Van Diemen's Land, and New Holland. It is singular that the pediment and the ornamented barge-board of a British cottage should be a common feature in the better description of huts of the New Zealand chiefs.

Illustrations of Landscape-gardening and of Garden Architecture, from the works or communications of garden-artists of all ages and countries, edited by J. C. Loudon, promised and commenced so long ago as 1828, is far advanced. An Elementary Plate, showing all the different details of map-drawing, and which will serve as an excellent drawing-book for gardeners: Design by Mr. Masey for a Public Garden for Bristol; the Public Gardens of Frankfort, on three plates, by M. Rinz; Design, by Mr. Major, for laying out 100 acres, near Leeds, as a Villa Residence; and the Park at Nymphenburg, in four plates, by M. Sckell of Munich, are engraved, and in the hands of Mr. Hullmandel, for printing. The size of the plates is 22 in. by 18 in. The work will appear in parts, at 21s.; and at the same time in numbers, at 3s. each. Pl. I., *Elementary Details of Map-drawing*, will be sold by itself, price 2s.

Korán Minor; or a Supplement to all the preceding Editions or Publications of the *Encyclopædia of Gardening* [see W. T. in *Times*, July 22.], is in preparation, and, we trust, will be ready early in 1831. All those who are in possession of the *Encyclopædia of Gardening* will greatly oblige us if they will send us whatever corrections, additions, or alterations they may think necessary, not only for this Supplement, but for a new edition of the *Encyclopædia*. These will be in time if they reach us by Michaelmas next, as neither of the works will be put to press this year. Corrections as to the names and owners of the country seats mentioned in Part IV. will be particularly acceptable, and the same as to the statistics of the *Encyclopædia of Agriculture*, now passing through the press. All who send us corrections between August and October next will receive a copy of the Supplement gratis. — *Cond. July.*

Hortus Britannicus. — The last sheets are now passing through the press, and the work will certainly be published by the middle of August.

PART III.

MISCELLANEOUS INTELLIGENCE.

ART. I. *General Notices.*

STEAM PLOUGH.—We noticed, some time ago (p. 160.), the spirited offer of Mr. Handley, of 100 gs. for the best steam plough. We hope the time is not far distant when a sufficient number of subscribers may be found, at all manner of sums, from 1*l.* upwards, to produce 1000*l.* for the laudable and patriotic object proposed by Mr. Handley. In the mean time, this gentleman's offer has stimulated two very ingenious mechanics, Messrs. Wykes and Phillips, Market Street, Edgware Road, to produce the model of a ploughing, or, more properly, a digging or grubbing machine, to be impelled by steam. The model is well worth examining. It is arranged on the principle of rendering the action of grubbing the fulcrum for moving forward the machine; so that, a certain power of steam being applied, the machine would move along a ridge, or a breadth of such a number of feet as might be determined on (say 6, 10, 12, or 15 ft.), at a greater or less rate, according to the tenacity of the soil. Such a machine would, no doubt, be applicable to many of the purposes of field culture, and more especially to the working of fallows. But it would not answer for ploughing up leys, or recent or tender grass-lands to be sown after once ploughing; neither would it plough in manure, nor form lands into drills for turnips or potatoes; nor would it harrow, hoe, or mow, or reap, all which might be done by steam, as before observed (Vol. III. p. 242.). To apply steam successfully to agriculture, it has always appeared to us that the engineer ought not to seek for a new implement, but simply for a convenient locomotive power for impelling the implements already in use, modified so as to suit the new impelling power. The power for dragging forward Lumbert's mole-plough (*Encyc. of Agr.*, § 2523.) supplies the germ of this idea. There would be no difficulty in inventing a locomotive engine that would move itself any where, either on rough or smooth, level or sloping surfaces. There would be no difficulty of stopping this machine at any one point, throwing out or down long levers, with claws at the extremities, to serve as grappling-irons to retain it firmly in its position. There might then be a vertical gin-wheel, with a chain, say of 100 yards. Supposing the locomotive machine taken to the first ridge of a field, the chain wound up, and the end of it attached either to one or many ploughs, harrows, or other implements. Then let the machine be put in motion, and advance 90 yds., unwinding the chain, which will now lie on the ground in a line between the steam-machine and the plough or harrow machine. Now, reverse the turning of the gin-wheel, and the plough will be dragged up to the engine. Change the wheel, lift up or draw in (all, of course, by the machine itself) the grappling-levers, and proceed as before. To some this may seem, at first sight, a slow and awkward mode; but, if a ridge of 12 ft. were ploughed, or the width of three ridges harrowed, every time the machine advanced, a 20-acre field would soon be got over. Nothing could be easier than to adapt ploughs and all implements, even Bell's reaping-machine (p. 295.), the thrashing-machine, &c., to such a locomotive power. Whenever an ample

reward is offered, the thing will be done. Or whoever thinks fit to employ such an engineer as Brunell, will have the locomotive power invented and executed in a month, as a matter of course. If this mode is not adopted, stationary engines, at the ends of the ridges, must be resorted to; or fixed points, found or placed there, to which an engine and plough, attached by a chain, might plough itself forward. We recommend the subject to the *Mechanics' Magazine*. It must never be forgotten that, independently of the saving of horses and their food, the farmer would never be obliged to work his soil but when it was in a proper condition for that purpose. This, in our opinion, is one of the principal arguments in favour of the application of steam to agriculture. — *Cond.*

Dick's Railways. — An elevated railway, and a suspension railway, on an entirely new construction, have lately been invented by Mr. Maxwell Dick. For details, we must necessarily refer to other publications, to the *Scotsman*, *Mechanics' Magazine*, No. 358. and 360., and to a pamphlet, *Description of the Suspension Railway, &c.*, with engravings; sold at Mr. Dick's office at Charing Cross, London, where large models of the different kinds of rails are exhibited and explained by Mr. Dick. The contemplated results, if obtained (and there seems no reason why they should not), will give a conveyance of goods and passengers at any rate which may be fixed on, between 20 and 60 miles an hour; and of the mail or light packages, at between 60 and 100 miles an hour. The means by which this celerity is obtained are, the diminution of friction to the greatest practicable extent, and the nearest practicable approximation to a level and straight line. Another advantage is, that the ground which it passes over may be used, with the exception of the spaces occupied by the props or pillars, for agricultural purposes. The total expense of purchasing the ground, and erecting this rail complete, is estimated at about 1400*l.* a mile. A common ground railroad, complete, averages about 4500*l.* per mile. We hope Mr. Dick will endeavour to erect a specimen somewhere in the neighbourhood of London; say a circle, or a straight line of a mile or two miles (government permitting), in Hyde Park. This will do more for establishing the transcendent merit of this invention than any thing which we could write respecting it. — *Cond.*

A Suspension Railway, of a different description, has recently been erected in the Panharmonicon Gardens, Liverpool Street, Gray's Inn Road. It consists of a single rail, about 12 ft. from the ground, from which a carriage is suspended, somewhat in Palmer's manner; and the rail being on a level, a considerable weight (say that of the carriage and 24 persons) is moved along it by a locomotive power worked by two men, at the rate of 12 or 15 miles an hour. These gardens occupy about 2 acres, and are now forming at a very great expense; but we regret to say that, both in point of planting and architecture, they are much behind contemporary taste. The pedestals to the statues of the cabinets, and the landscapes on the walls, are execrable; but the idea of the railway, the subterraneous passage, grotto, suspension-bridge, waterfall of 50 ft., and green-house that, when finished, will be nearly half a mile in length, are suitable to the locality and probable visitors, and only require to be well executed. What is wanted is, the occasional assistance of an architect of taste; of Mr. Fowler, for example; or, in what concerns vases and sculpture, of Mr. Allason. — *Cond.*

Locomotive Steam Engines. — We think so highly of the capabilities of these new inventions, that, in our opinion, an Edinburgh man of thirty, with fair prospects of life, may expect, before he dies, to enjoy the felicity of passing from his own home to the metropolis during the daylight of one long summer's day! (*Scotsman*, Oct. 10. 1829.) By Dick's railway, he might go, stop two hours, and return in the same time. — *Cond.*

Some very interesting Experiments with Canal Boats have lately been made, by the suggestion of Mr. William Houston of Johnstone, on the Ardrossan and Paisley canal. The result is, that, by using boats of a particular description,

long, narrow, and flatbottomed, dragged by horses, a speed of 8 or 10 miles an hour is obtained; and, what is most remarkable and most advantageous as a result, scarcely any surge, which is known to be so destructive to canal banks, produced. Travelling by canal may thus be rendered as rapid as travelling by coach. We cannot spare room for details, but they will be found in that excellent newspaper the *Scotsman*, vol. xiv. No. 1089, June 16. It is a remarkable feature of this paper, that it anticipated the employment and the speed of locomotive steam-engines lately obtained between Manchester and Liverpool, so long ago as December 1824, when the editor was derided as a dreamer and an enthusiast. So did the editor of the *Country Times* in the *Kaleidoscope* of March 1. 1825, as quoted in the *Country Times* of July 12. — *Cond.*

Braithwaite's Steam Fire-extinguishing Engine is a machine of recent invention, and most extraordinary power. Its boiler, which is the same as that used in Braithwaite's and Ericsson's locomotive engine, occupies four fifths less space than any boiler upon any other construction yet made. The saving of fuel is more than one half; and the flue of the fire being too small to allow of what is commonly called atmosphere in draught, a blowing apparatus or bellows supplies the requisite quantity of air. The machine will deliver from 40 to 50 tons of water per hour to an elevation of from 60 to 90 ft., according to the adjutage and the wind. On a calm day, the distance of 140 ft. has been accomplished. The editor of the *Literary Gazette* (No. 698. p. 370.), who saw the engine in action, expresses his belief in its being equal to subdue the fiercest conflagration in a very short time. This is the machine that, properly applied, will, at some future time, plough and sow 1000 acres in a week, and reap the crop in a day. — *Cond.*

The object of Cooperative Societies is to give the producers the full value of their labour. For instance, a market-gardener has a certain quantity of land, and ten men employed; he also has 200*l.* in live and dead stock: now, as soon as the ten men are able to invest one-half of the capital required, the master and the men should come to this agreement, that each party is to receive interest for capital, and the reward of labour to be measured in proportion to the value of the skill and industry exercised by each.

If the master's time is worth more than any of the men's, let him receive an adequate proportion of profit; if not more valuable, he should not receive more: but, as long as the men leave all the risk for the master, so long must they be content to allow him to give them what portion he pleases. When they take part of the risk, they can make better terms. This instance must be applied to the working people of all trades: they have no right to receive the full value of their labour, until they work on their capital instead of the capital of others.

The means which are now in operation in almost every county in England, to give the workmen a capital, are by a number of men and women becoming members of a cooperative society, each depositing an equal sum, as 3*d.*, 6*d.*, or 1*s.* weekly, the amount being laid out in the wholesale purchase of the commodities which their families buy at other people's shops: it is, indeed, by the people having shops of their own, instead of dealing at other people's shops. Those commodities are sold at the usual retail prices, and the profits added to the common capital; which capital is to be used in giving employment to that number of their members which will be most advantageous to the society, and in the purchase or rental of land, in the building of houses, and in allowing such as like to escape from the cares and troubles of competition to reside there, rearing their own food, producing their own clothing, furniture, &c., and exchanging the surplus for such commodities as they cannot produce on these lands; and, as soon as possible, annihilating individual interests. The object is, indeed, to give to every industrious family the means of easily surrounding themselves with all the essentials to a comfortable existence.

The Secretaries of the "London Society for the Diffusion of Cooperative Knowledge," No. 2. Jerusalem Passage, Clerkenwell, will give further information when desired to do so. I am, Sir, &c. — *J. C. Penn, London, August 20. 1829.*

From the insulated situation of gardeners in comparison of mechanics and manufacturers, they are less likely to benefit from cooperation; but we have no doubt that, in different situations, by joining with their neighbours, they might benefit to some extent; for instance, in the price of provisions. At the same time, we are not fully satisfied in our own mind that the cooperative system, as described in the above letter, is truly founded in nature, and likely to maintain a permanent footing in communities. We have not been able to bring ourselves to the belief that *the annihilation of individual interests* is in the order of nature; but we are not sure that we understand what is meant by it. It seems to us that cooperation is at least an excellent discipline to the cooperators; and that, if they continue to cooperate for a length of time, they must in the end acquire capital. We confess we doubt the continuance; but we most sincerely wish, as we have already observed (Vol. V. p. 388.), a fair trial to the system. We therefore again recommend to all our readers the penny tracts on cooperation before named. — *Cond.*

Cooperation in Education and Travel in Foreign Countries. — "Several months ago it was announced in the French papers that Count Alexander de Laborde had issued proposals for educating a certain number of pupils, under competent masters; the distinguishing feature being, that the pupils should acquire the living languages in the different countries; of which, at the same time, they could attain a competent knowledge of the laws, customs, institutions, arts, sciences, &c. We now find that the young persons who had been got together on this travelling scheme have already visited Turin, Genoa, Florence, and Rome, and they are said to have made great progress in the different branches of education. As they travel on an economical scale, parents, who are anxious for their sons to see the world, have thus an opportunity of sending them out without the exclusive expense of a travelling tutor." (*Literary Gazette*, March 6.)

This is an excellent idea, and we have no doubt it will in time be generally adopted in every civilised country. Travelling, as a means of education, was formerly only within the power of the wealthy; by applying to it the cooperative principle, it is brought within the reach of the middling classes, tradesmen and farmers. By Dick's raised railroads and locomotive engines it may in a few years become as easy to make the tour of Europe as it is now to make the tour of Britain, and as easy to visit all the principal cities of the world as it is now to visit the principal cities of Europe. Such a state of things could not exist long without one language prevailing over every other. When Britain and France shall be self-governed for the good of the whole, as in America, the inhabitants of the three countries will know each other better, and will cooperate for the establishment of the same weights, measures, monies, and language throughout the world. But why suppose that travelling will be limited to the independent classes, or to children supported by their parents? By Mr. Dick's railway, and manual locomotive power, half a dozen gardeners or mechanics might move themselves all over Europe, working now and then when they chose, as the gardeners and mechanics now walk on foot through Germany, and recruit their finances by a few weeks' work every now and then. Thus, with the spread of knowledge and its application, all, even the most refined enjoyments of the highest classes, may be brought within the reach of the lowest, viz. those who live by the commonest descriptions of manual labour. — *Cond.*

A Stove with an open Fire Place, the object of which is to cure smoky chimneys, has been patented in France by M. Fonzi, an Italian dentist, and

is now exhibiting in Percy Street, London. There is nothing new in the principle, and the only difference between this cast-iron stove and those in common use for warming workshops, halls, &c. is, that the front, and the door or opening for the fuel, instead of being perpendicular, are inclined at an angle of probably 30° . By this means, when the fire is lighted, a draft created, and the door removed, the fire is seen somewhat in the same manner as in a common fireplace. Instead of a hinged door, M. Fonzi employs a lid, which when the fire is lighted he removes for the day. For particular cases, and especially where a chimney smokes, these stoves may be substituted for the common open fireplace, with the advantage of showing the fire, so gratifying to popular English feeling; but as, whenever the fire becomes low, the draft must cease, and the smoke and dust rise into the apartment, they are never likely to come into general use.

A Domestic Improvement, of a different nature, is about to be commenced by M. Fonzi, which we shall hail with more satisfaction than his stove, and in which we do not doubt that he will be much more successful. M. Fonzi is the original inventor of the *terro-metallic teeth** lately introduced to London from Paris, and, for every quality required in artificial teeth, found greatly superior to any of the kind hitherto in use. These teeth are now sold, even by the cheapest dentists, at two and three guineas each. It is M. Fonzi's intention to reduce the price to 5s. or 7s., by which means they may come into universal use, and the humblest female may thus mend her charms in this department as readily as she now does in the article of hair. This we think will be a very great improvement, and M. Fonzi will deserve immortal honour for the attempt to bring it about. We do not believe there is a class of men in the country who so soon make fortunes as dentists in full employment; and the reason is, because there are so few in the trade that it is held as a mystery. It is supposed to be something too high for a mechanic, and yet too low for a regularly educated medical man. As society advances all mysteries will be revealed, the principle of the division of labour will be applied in this case as in every other, and the business of the dentist will resolve itself into that of the surgeon dentist, the mechanic dentist, and the tooth manufacturer. The latter requires no more skill than a china manufacturer; nor the mechanic dentist than a barber, certainly not a tithe of the science of a carpenter and joiner. The raw material of the *terro-metallic teeth* is the same as that which is burnt into china, with the addition of a metallic oxide, so that its cost and its manufacture into teeth can be no great object, and the wages of the operator or mechanic dentist in fitting in the teeth when once there is such a general demand as we contemplate, will not exceed those of a journeyman peruke-maker. In the mean time, before this business is brought to its lowest level, there will be money to be made by it, and we would point it out to parents as a very desirable business for their sons. In Paris, ladies sometimes exercise the profession, and very properly so when they confine their practice to their own sex. The inhabitants of Australia very soon lose their teeth, and a mechanical dentist must be a good business with a view to emigration thither. M. Fonzi styles himself "surgeon-dentist to the Imperial Court of Russia, and his Majesty the King of Spain." He will render no small service to the cause of civilisation and refinement, if he brings one more of those enjoyments, hitherto attainable exclusively by the rich, within the means of the poor. We hope a few knowing gardeners and mechanics will

* See Rapport fait à l'Athénée des Arts, &c., sur l'Examen des divers Procédés employés par M. Dubois-Foucon, et par M. Fonzi, pour la fabrication des dents artificielles, lu et adopté dans l'assemblée générale du 13 Novembre, 1809.

get themselves or their sons made dentists without loss of time. We recommend the subject to our esteemed contemporary the editor of the *Mechanics' Magazine and Spirit of Literature*. — *Cond.*

Ear-rings are an idolatrous and heathenish abomination. As the sun shineth, I believe them to be unsightly relics of a barbarous age. If we are to retain the customs of savages, why exempt the nose from its ~~anular~~ appendage? (*New Monthly Magazine*, July, 1830. p. 18.)

We have always been of this opinion. The use of cosmetics and of various appendages to heighten beauty is natural, because they are in imitation of nature; but rings, like tattooing, are an outrage. We have found many ladies who, though agreeing with us, continued the custom, because their ears were bored. We do not think this a sufficient reason; but, nevertheless, let every lady follow her own taste. To parents, however, we would address ourselves, and entreat of them not to have their children's ears perforated till they attain the age of maturity. When the fashion of leaving off ear-rings becomes general among the higher classes, it will soon pervade those which are below them, and that money and care now bestowed on these barbarous ornaments may be transferred to the teeth, to which the lower and middling classes of Englishwomen are perhaps rather deficient in attention. — *Cond.*

With regard to Mr. Owen's Plan for reforming all Classes I have given some consideration to his plan, read his books, and also entered largely into his doctrines. I cannot say, however, that I either approve of them, or think them practicable. It appears to me that no perfect community of interest can exist between different people, unless they know that their union must be; and that, whether they succeed or fail, are happy or miserable, satisfied or discontented, they are obliged to remain with each other; having no wealth but what is derived from a common source, and being compelled to make the best they can of their situation, without the possibility of changing it but by losing a portion of their own respectability and consequence in the world. This perfect and permanent union, which can only exist between husband and wife, or parent and child, seems to me indispensable to the happiness of those who live constantly with each other; for, without some ties of equal potency, the jarring tempers and discordant habits of human beings can never be amalgamated into one perfect mass. All communities that have been hitherto presented to my observation have been sources of misery. I was a short time a boarder in a convent, and I was disgusted with the petty quarrels, the envies, hatreds, and jealousies that corroded the bosoms of the good nuns. I have seen the same effects produced in boarding-schools and boarding-houses, and have heard of them in regiments where the families of the respective officers form a species of community something similar to that proposed by Mr. Owen. I also think that, constituted as we are, men and women cannot live together without feeling sentiments of a more violent nature than is consistent with Mr. Owen's ideas of tranquil happiness. It is an old and trite remark, that male and female servants in the same house must always be either quarrelling or making love, and I am sure it is the same in boarding-houses. Besides which, I do not think that the human breast can share its inmost recesses with more than one: when others are admitted, it is only into the outer courts; the adytum is held sacred, and is then only occupied by self. Mr. Owen, I believe, says that we are the creatures of circumstances, and that we are often good or bad solely from the characters by which we are surrounded, or the events which may have chanced to bring our passions into play. This, to a certain extent, I am quite ready to admit. But, as a radish seed, though it may produce a finer or weaker plant according to the soil in which it may be sown, can never, under any circumstances, be forced to produce a cabbage, so the mind of any individual, though it may be modified and partially changed by education or other causes, can never be essentially altered. Its original character must remain the same; and, when powerfully excited, it will break forth. The acquired habits, indeed, are then like the clothes of a dancing dog tempted by the sight of his natural prey; they are either forgotten, or regarded as trifling impediments; and though they cannot be quite thrown aside, are at least obliged to become subservient to the stronger impulse of the moment. — *J. W. Bath, May 10. 1830.*

Permanent Relief to all Classes. — Whatever may be the temporary or partial alleviation of the present distress by Mr. Owen's scheme, or any other, we entirely agree with Lord King, "that we can only expect to derive permanent relief from our distresses and impoverishment in our condition, from the strictest economy in every branch of the public expenditure, from the abolition of all exclusive privileges [all those of the nobility, and especially hereditary legislation, included] and monopolies; from an unrestricted supply of the first necessities of life, and of the materials of manufacture; and from a real free trade; by which the whole community, as consumers, will be greatly benefited, the labouring classes enabled to procure a fair reward, the capitalist to augment those funds by which all labour is supported, and the efficiency of British industry fully permitted to produce its natural result in enriching the country, and thus to restore and secure the public prosperity." (*Lord King's Speech, Spectator, Feb. 7. 1830.*) — The two principal means which will operate towards producing these ameliorations are the spread of political knowledge among all classes, and the pressure of public burdens on the middle ranks. The aristocracy would submit to the pressure of public burdens, because in the army, navy, and church they share the spoil; but the middling classes, who do not share in the spoil, will not submit to them much longer. It is singular that Lord King's resolutions, as delivered in the House of Lords in February last, and the most enlightened and liberal that ever were spoken there, of which the above quotation is the concluding one, should hardly have been noticed by the legislature, and only commented on by two newspapers, the *Spectator* and the *Examiner*, the latter the most consistent and independent in London. — *Cond.*

The Size of Fruits produced on trees, and suspended in the air, it has

been proved by M. St. Hilaire, may be somewhat increased by supporting them. The fruit experimented on was the pear. It is curious that the Lancashire gooseberry-growers have long been doing nearly the same thing with their prize berries.

The Everlasting Potato, and the late Red Roger Potato. — With regard to writing "two words" upon them, they are not worth *one*, being nothing more than a small variety of the common potato; any of which may be cultivated to the same purpose, and in the same way: this being selected for its smallness, as more resembling *new* potatoes when taken up from its bed in *winter*; which bed, when the tops die in autumn, is to be thickly covered with litter or leaves, through which, in spring, the shoots will come up freely, and root in very thick clusters. The specimens sent are removed at a bad time, having tops to be pulled off; which if they do not reproduce or die, I will send you more, as you wish it. They are very common about here; and, in winter, form a delicate supper vegetable, having all the excellence of new potatoes (as there *be* any excellence), without their sweetish insipid wateriness. I send you also a most excellent variety of potato, here called the *Red Roger*, and highly esteemed by fancy *solanists* as a *late* sort, coming into eating about May, and keeping good till the great crop of others is quite ripe, while most vegetables are scant. It is, however, a very poor cropper. Mr. Murray, at dinner with me in July, thought this variety a treasure, and took some with him to Stranraer in Galloway. This is the Spider Murray who figures in your *Magazine of Natural History*. — John F. M. D. Westfelton, May 30. 1830.

ART. II. *Foreign Notices.*

FRANCE.

Paris, June 10. 1830. — Notwithstanding the severity of our winter, all the plants of *Magnolia grandiflora* at Sceau have stood without losing any of their leaves. The *Laurustinus* and *Alatérnus*, the common whin, and some other evergreens, have been cut down to the ground. *Cupressus sempervirens*, at the least 40 years old, almost killed. *Rhododendrons*, and other evergreens, in southern exposures, killed or much injured, while those exposed to the north are unhurt. This, I believe, takes place in most countries, the injury being done by the sudden influence of the sun. — Thos. Blaikie.

GERMANY.

Michael August Stoettner, of Nuremberg, has one of the most extensive assortments of pelargoniums on the Continent. We saw them in the autumn of 1828; and Mr. Stoettner, who has lately visited London, has presented us with his catalogue for 1829, which contains upwards of 430 names, with their authorities. This gentleman, who is an amateur, has, with the assistance of M. Reider, a well known gardening author of Nuremberg, commenced the *Geraniaceæ* there, after the manner of Sweet's. The engravings and colouring of this German *Geraniaceæ*, he says, are much superior to those of the English one; but this, till we see a specimen of the work, we must take the liberty of doubting. — Cond.

POLAND.

The Pfandbrief or Mortgage Society here had its origin in the following manner: — The landed proprietors in Poland, after the late wars and disturbances on the Continent, found themselves encumbered with debts, for which they were compelled to pay a high interest to Jewish and other money-lenders. The consequence was, that great numbers were either

obliged to sell their land, or find out some other way of paying. They applied to the Emperor Alexander for permission to establish a Society for lending money on land, which was granted. A person who borrows can receive one-fourth of the value of his estate, for which he pays during the space of twenty-eight years interest 6 per cent.; and 2 per cent. goes towards paying off the capital, and 4 per cent. is the interest, so that, at the end of twenty-eight years, both capital and interest are paid off. For greater security, every estate is liable, not only for its own debt, but for the debts of the whole. The government have a great many estates in their own hands, which they have begun to sell to the highest bidder. In order to facilitate their sale, they have taken from this Society as much money as it will lend them, and the person buying does not require a great sum of ready money, because he pays it off in twenty-eight years. An industrious farmer with 2000*l.* might become a large landed proprietor. — *J. L. Warsaw, May 13. 1830.*

NORTH AMERICA.

The Osage Apple and Maclura aurantiaca. — Sir, On the 20th of last month I sent you a second osage apple [duly received], and I will send you trees, a male and female*, next November, *Deo volente*. The fruit does ripen in this State. The tree is immensely valuable in its native region. It is so tough and elastic that the Indians make their bows of it, and it also affords a fine yellow dye.

Sweet Maize or Sweet Corn. — I send you also two ears of Indian corn, of the kind called "sweet corn," from its superior sweetness to all the other varieties of that inestimable grain, the *magnum Dei donum* to the United States, and to all climates in which it will ripen. I do not know whether this variety is the same as that cultivated by Mr. Cobbett (p. 60.). Although the grains appear shrivelled when dry, they are plump when ripe, and brilliantly white. In this climate (Pennsylvania), if planted about the 10th of May, the corn will be fit to eat in the middle of July: in the southern States, at an earlier date. The proper state in which to eat it is when the milk flows or spurts out thick, upon pressing the grains with the thumb nail. The best way to enjoy it, is to boil the ears with the husks on, and, when brought to table, to cover the ears with butter, adding a little salt, and to eat the grains off the cob. Over-refined people think this is a vulgar mode, and shave off the grains from the cob; but in so doing they lose much of their sweetness. This variety of Indian corn was found by the officers attached to the army or expedition of General Sullivan, in the year 1779, which was sent against the Indians, in the Genessee country, and brought to Connecticut, whence it has proceeded south. The "nubbins," when about the size of the middle finger, are sometimes pickled in vinegar, and constitute an ornamental article, and pleasant condiment. Other varieties of corn are used in the same way. I also send an ear of blood-red corn, called "chicken corn," and a large variegated ear. We have also different kinds of yellow corn. — *J. M. Philadelphia, January 13. 1830.*

We have sent the ears to Mr. Charlwood's, seedsman, Great Russell Street, Covent Garden, who will distribute them to whoever calls, and undertakes that the intended grower shall send us an account of his suc-

* We are much obliged to our much valued and most sincerely esteemed correspondent; but we already have a female, on which we intend, this summer, to bud a male. Can he send us any seeds of a tree or a plant, no matter of how common a sort, from Mount Vernon or Monticello? These would remind us of two of what we consider the greatest men that ever lived, or, speaking relatively to age and country, probably ever can or will live. — *Cond.*

cess, with an ear of each kind of the corn. The sweet corn is the only sort that merits attention in point of utility, and we hope will be tried by gardeners, with a view to its introduction as a cottage vegetable. — *Cond.*

SOUTH AMERICA.

Caraccas, March 20. 1830. — Sir, On my arrival in Caraccas, I was informed that there was a botanical garden establishing there, and being curious to see the state of forwardness it was in, I was accompanied by Sir John Lewis, of His Britannic Majesty's ship *Baron*, who was acquainted with the proprietor, Mr. Fanning. We found him very busily employed amongst his plants. On our walking through the garden, he showed us the cherry-trees in flower which had not been more than one month planted, and not more than ten weeks from London: some of the cherries were formed, and in a forward state. The whole of the fruit trees appeared in a fine state, the sycamore, hazel, oak, walnut, chestnut, pines, and elms, were in a very forward state.

In conversing with Admiral Fleming respecting the garden, &c., he professed great astonishment at the state of forwardness Mr. Fanning has brought the garden to, and he has taken great interest in Mr. Fanning's welfare, and has frequently visited the garden, as well as all the general officers of his fleet.

The garden is small, but neatly laid out in squares; the walks are well proportioned, and some of them beautifully shaded with the Fig banana, which has a splendid appearance; the towery stems and expanding leaves, with its rich and delicious fruit, give the garden and walks a grand appearance. During my stay in Caraccas I frequently visited the garden in the afternoon, where I met with most of the grandes of Caraccas, it being the only place to take a walk in or about the city. Mr. Fanning being a man of mild and gentle manners, and having rendered great services to the country, he is much liked by the ladies as well as the gentlemen, and, indeed, deserves great credit. I am happy to learn that, from the Admiral's interference, General Paez has ordered Mr. Fanning to take charge of several working people of his to work in his garden, and has given Mr. Fanning apartments in his private house to live in: and I have every reason to believe that the General will promote the views of Mr. Fanning in all his undertakings. I am, &c. — *E. A. Williamson.*

ASIA.

Royal Botanic Garden, Mauritius, March 12. 1830. — With reference to the remarks in Vol. I. p. 54., I am happy, not only to state that the botanic garden at this place is still kept up, but that, since I have had the honour of superintending it, several interesting species have been sent from different parts; and I am not aware of any garden, whether in regard to soil or situation, within the tropics, that could possess such a number of species. The *Eucalyptus*, *Mimosa*, and all the large-leaved plants of New Holland, and many Cape plants, thrive remarkably well; while those from the East Indies and China enjoy the luxuriance of their native climate. We have frequent correspondence with almost every part of the globe, and exclusive communication with that great field of science, Madagascar, which no other garden can possibly possess. Our garden, although laid out in the oldest French style, has the advantage of being irrigated, thereby saving a number of hands, and effectually watering the plants in the driest seasons. I will send you a sketch of this garden, which may be considered as one of the oldest tropical gardens existing, and as having been the source from which most of the nutmeg, clove, and cinnamon is sent to the West India Islands.

Culture of Asparagus in the Mauritius. — Although the mode of cultivating vegetables within the tropics will be of little interest to the generality of your readers, as methods superior in every way are adopted in England, it

may not be amiss to relate my mode of cultivating asparagus here. I think it may be cultivated with equal success from 18° to 24° of latitude. Although I had seen some fine asparagus at the Mauritius from a garden of Mons. Bouillard, who is famed for growing asparagus, as well as many other plants; there appeared to be no method in practice for obtaining a continual crop of nearly eight months in the year. Considering it the chief part of my duty to endeavour to bring into practice among the inhabitants the best methods of producing vegetables in greater abundance, I have succeeded in bringing the cultivation of asparagus to the greatest perfection, in nowise inferior to that of Europe. Every situation, however, will not admit of cultivating this plant in my way. It should be a piece of ground lying dry, and upon a gentle slope, with a command of water, which is to be obtained in almost every valley in the Mauritius. I trace marks 3 ft. distant, so that the man may dig a trench about 14 in. wide and 8 in. deep, throwing the mould taken out of the trench between the rows. The trench is then filled with dung, leaf mould, and common earth, mixed together, and covered over with an inch of the mould taken out of the trench. The seeds are sown about 9 in. apart in the rows at almost any time. In about a fortnight they begin to appear above ground; in two months afterwards they begin to show flowers, though very weak the first time. When the seed berries are red, the stalks are cut down, and 2 in. of light mould is added to the bed. If the weather be dry, they must be irrigated, or well watered (with pots), and in a fortnight they will shoot up about the size of quills, and from six to eight shoots at each stem. When they ripen their seeds again, the bed is well manured with dung and leaf mould, or mould only, and not watered, as in the previous cutting; by this time it will be strong enough to commence forcing it (if I may be allowed the expression), and upon this depends the fineness and quantity of the future crop. According to the quantity required for a family, say two or more rows of asparagus, that have the seeds very ripe or fallen, are cut completely down to the ground, and if the mould is considered not deep enough to blanch them, an inch or two of light mould is added. The water is let in upon the two beds every other day, as it may be required; in about five or seven days the young asparagus begins to shoot, and will at this cutting produce many stems, nearly as thick as in Europe, but too many must not be cut this time. As soon as they commence shooting, two or more beds must be treated in the same way, and so on to the end, keeping the beds that have been previously cut, occasionally watered, until the seeds ripen again; then proceed as before, adding a little manure each time. The fineness and quantity of asparagus that can be produced in this way is scarcely credible; and from the time of sowing until the first cutting for the table occupies no more than ten or fourteen months. I think it advisable, at the end of two years, to destroy the beds, having always arranged other beds for succession, as it gets weaker after five or six cuttings, and there is so little trouble in preparing and keeping the beds.

The prices of vegetables and other necessities of life at the Mauritius are exorbitant. Potatoes, from March till August, are from 6d. to 1s. 6d. per lb.; the other part of the year, when the potato crop at the Mauritius and arrivals from Europe, Van Diemen's Land, &c. appear in the market, they are tolerably cheap. Cabbages are sometimes cut into small slices for those who cannot afford to purchase the half or whole; I have seen cabbages sold for 1s. 6d. each. Peas, although always dear, are perhaps cheaper than some other vegetables when in season. We can (taking care to save the seed and sow it again immediately) obtain three crops of early sorts of peas in a season from the same seed. Animal food is dear in proportion to vegetables. You will perhaps conclude from this, that it would be a desirable place for a gardener or a grazier to obtain a fortune: almost the contrary: it requires a large capital, or, if credit could be had, the grinding interest of ten or

twelve per cent. steps in. Slaves are very high in price, and so few have been brought up to horticulture, that it would be some time ere they could (or, rather, would) be taught the method; and, even after all apparent difficulties have been surmounted, another, and the most galling visitation is experienced. There are, in almost every corner, people who have been liberated from slavery, or Creoles of bad character, who live by stealing, or rather encouraging to steal, so that your own blacks would be bribed to carry off all or a part of any vegetables or fruits you might grow. The punishment for such offences I cannot enter upon, but I can state what recompense the owner would get. Your blacks, who have stolen the property are *bonâ fide* your own property, your fortune: if you punish them severely, which is seldom the case, they go with a complaint, you lose their work, and consequently *your own living*. They complain of the punishment, and are not well (or will not be well), for months afterwards. It is a very false assertion, that the blacks are generally treated badly at the Mauritius. I came myself to the Mauritius with the same prejudice against the planters: time, however, has taught me to consider otherwise. They are invariably treated well, and fed much better than the poor people of Wales. My occupation leading me more among planters than any other government servants, I speak with confidence on this head. The young government blacks will no doubt prove useful subjects. From the extreme scarcity of vegetables, I had suggested to government the propriety of having a number of young boys apprenticed to me, to bring up to horticulture. If they behave well during their apprenticeship, government might emancipate some of them, and they would then have a profession to obtain a livelihood in a respectable manner. It is truly lamentable to see so many blacks who, if emancipated, could not earn their own living. Our esteemed governor has caused a chapel* to be erected, and a catechist to instruct the blacks of this establishment, as well as all others belonging to government; and I have warm hopes the instruction given to the blacks will eventually be of the greatest use, and make them good and happy subjects.

I shall feel most happy to give any information at any time upon any subject connected with horticulture. I am, Sir, &c. — *John Newman, Superintendent of the Royal Botanic Garden, Mauritius.*

AUSTRALIA.

New Zealand. — We have lately seen a number of views, about to be published in monthly Numbers, with descriptions, of the scenery of this island, and had a good deal of conversation with Mr. A. Earle, the artist who took them, and who has devoted twelve years in travelling through New South Wales, Van Diemen's Land, and some of the most interesting of the South Sea islands, &c. According to this gentleman, the soil is for the most part calcareous and highly productive, the climate excellent, and the people naturally of a noble character, both physically and intellectually. Baxter, the botanist, recently returned from the same country, gives the same account, both of the country and natives. The inhabitants are by no means in a state of barbarism, for all the country is appropriated, and belongs to different chiefs. These chiefs are very open to commerce and friendship with strangers, and from many of them large tracts of land might

* We hope an infant school will not be forgotten, and that all the adults of both sexes will be taught all the labours and operations likely to be useful for them. By a proper system of infant schools, connected with parochial institutions, the natives of all our colonies would become in all respects as good as ourselves in two generations. But who in Britain would think of looking on the colonies in any other light than as sources of income for the pauper aristocracy? — *Cond.*

be obtained for a trifle. On the whole, the impression on our mind is, that New Zealand is a most desirable country for a colony of Europeans, who might settle there, and govern themselves without the interference of the mother country, at present pressing so severely at Sydney, the Cape of Good Hope, and other misgoverned colonies. According to all the accounts which we have received, an emigrant with a little capital would have an incomparably better chance of prosperity and happiness, by taking his chance among the New Zealanders, than encountering the certain tyranny of the government of Sydney. The things related of the present governor, and we fear truly, are indeed horrible. (See *Scotsman*, July 17.)—*Cond.*

ART. III. *Domestic Notices.*

ENGLAND.

LESSONS on Botany, to young ladies or gentlemen residing in London or its neighbourhood, are about to be given by Mr. Sweet, who proposes to teach both the Linnean and Natural System, on moderate terms. We are heartily glad of this, and hope Mr. Sweet will extend his lessons to culture and management. There is not one person in five hundred of those who possess a house, and plot in the way of garden, in the neighbourhood of London, who knows how to make the most of the latter. If such persons were to take six mixed lessons of botany and culture, say one on each of the spring and summer months, for two or three years, they would find themselves, at the end of that time, within the pale of a new world; new enjoyments, and new wants. Even those who keep plants in pots, (window gardeners, as the French call them, and *stube* or room gardeners as they are called by the Germans,) would derive much benefit from a few lessons of management. We knew a lady who could not keep a heath alive six months till we taught her always to keep the bottom of the stem, botanically speaking the collar, above the level of the rim of the pot; the earth sloping from the stem to about half an inch under the rim of the pot, so that the plant seems to grow out of the summit of a little dry hill. She now grows a dozen sorts, as well as most nurserymen. Few persons that occupy houses have a tithe of the plants in pots about them which they might have. The roof of every house might be covered with pots by fixing boards over the tiles in the manner of a green-house stage. Alpines would grow better on a house-top than in the back yard or front area below. Miss Kent, who, as we mentioned in one of our earliest Numbers, also gives lessons in botany, and whose ability to do so in the most engaging manner will not be doubted by those who have read her very interesting Introduction to the Linnean System, in the *Magazine of Natural History*, lives in the very heart of London, between Paternoster Row and St. Paul's, yet she has a thriving garden of pots on the top of the house; not of sickly geraniums, but of pretty little hardy natives, among them the common gowan or daisy. In a very few years we expect to see botany, entomology, ornithology, and conchology, as generally taught in schools and private families as music now is, and certain we are that the sources of enjoyment which this will open up for the rising generation will be great beyond what many of their parents have any idea of.—*Cond.*

A School of Industry and an Infant School are about to be established at Potton, Bedfordshire. The proposals issued contain, in our opinion, some good features, with one or two bad ones. "That the utmost attention be paid to the religious instruction of the children, according to the liturgy and catechism of the church of England," we include among the latter, because we belong to the church of Scotland, and think it most probable

that most of the poor inhabitants about Potton are dissenters of one sort or another. We would confine school instruction to what is common to the religious of all civilised nations, morality and charity, and which Mr. Ensor has shown (*Principles of Morality*) to have been inculcated even so far as “to do unto all men as you would they should do unto you,” by pagans, by Antoninus Pius, and also by Trajan. The particular dogmas we would leave to be taught by the fathers and the mothers, as in Germany and America. To the following passage in the proposal we entirely object ; chiefly because, so far as our observation goes, it is untrue : — “ It has been alleged, and, perhaps, not without reason, that the present system of popular education has tended to unfit the poor for those situations in life in which they would have to move, making them aspire to preferment which they can never reach ; the consequence of which has been, discontent, idleness, and often vice.” We should really be glad to know in what part of the country the poor had been rendered discontented, idle, and vicious, by education. Discontented with their present situation we hope education always will render the poor and miserable, to such an extent as will stimulate them to better it, by increased skill and industry ; but what “ system of popular education ” it may be which has led to “ idleness, and often vice,” we confess we are utterly at a loss to know. We certainly think the assertion at variance with the general sense of the country on the subject.

The remaining part of the Proposal we think good, and shall be most happy to see it supported, and carried into execution, hoping that it may ultimately lead to the establishment of parochial institutions, such as we have recommended (Vol. V.), or something better, all over the country. The following are the essential parts of the Proposal : —

That there be a school for forty boys and forty girls, under the care of a master and mistress, in separate buildings.

That they be taught reading, writing, and arithmetic, but that half the school hours be spent in works of labour and industry ; the boys to mend their own clothes and shoes, clean knives and shoes, to use the needle and hammer, as well as the pen ; also out-door work, such as digging, gardening, hedging and ditching, and also ploughing when an opportunity offers.

That the girls be employed in needle-work, washing and ironing, mending their own clothes, in the business of a dairy, and in such practices of good housewifery as may fit and recommend them to good services.

That the expense of this establishment be provided for by public subscription, but that each child do pay, weekly, 3d. for the instruction and advantages it may obtain in these schools.

That, in order to encourage regular attendance and good behaviour, bits of land be given to those boys who shall be recommended by the master, which, on certain conditions, they shall cultivate for the benefit of their parents.

That an infant school be connected with this establishment, the operation of which is better understood by inspection than by any detail in writing, and the importance of such an institution, it is presumed, needs no recommendation. Suffice it to say that, whilst it affords health, cleanliness, and instruction to the children, it enables the mothers to earn something for their families, being secure that their offspring are not only taken care of, but receiving instruction with happiness and delight. It is given them in the shape of amusement : the rod is never thought of ; but the attention of the children is gained by the smiles and caresses of the instructor. The affection to the natural parent is at the same time preserved, and at the close of the day the infant is received at home with redoubled love and kindness on account of the improvement it has received. Compare this system with what are termed dame’s schools. In these, a large number of children are crowded in a small room, fixed to their seats, and either totally unemployed, or, what is nearly the same thing, doomed to the one unvaried

occupation of poring over their A B C, whilst the dame's only object is to keep the children quiet, and her only means the frequent infliction of punishment. To such schools the children resort with reluctance; they become peevish and fretful: whilst to the infant schools the children go with alacrity and delight, and are never more happy than when they are under the eye of their instructor, whom they look at with love and affection.

The promoter of this establishment at Potton [Montague Burgoyne, Esq. we believe] confesses that he feels more than a common interest in the success of it, because he is well assured of its general utility. He does not consider it as an experiment, because he has seen the good effects of the system in other places, not only on the children, but on their parents.

A nobleman of the highest rank, in the county of Bedford, as much respected as he is known, has given it as his opinion, that infant schools, and schools of industry, are the mainsprings of moral good; and is so persuaded of their great utility, that he has authorised the promoter of them to say, that he will cheerfully subscribe 100*l.*, if a fund can be raised to make them general in the county of Bedford.

A Metropolitan Cemetery was sometime ago proposed in the form of a pyramid (Vol. V. p. 214.), and another architectural extravaganza, something in the way of the Campo Santo, at Pisa, has lately appeared; the latter very handsome as an architectural design, but very impracticable, and, even if it were otherwise, very unfit, in our opinion, for the purpose in view. Piling up musty coffins in vaults is quite unsuitable to the present age, and practised only by antiquated kings and nobles, fast dying off in every part of the world. Our opinion has always been in favour of an extensive garden or arboretum; the interments of renters of seven, fourteen, or twenty-one years, made systematically, as at Munich, and those of purchasers in spots planted and ornamented according to the taste of the proprietors. The General Cemetery Company, lately established, proposes to proceed on the latter principle, and, we are happy to observe, has every prospect of being capable, after a few more shares are taken, of completely effecting its object. Several peers and members of parliament of the highest character are on the provisional committee; which may be considered as a guarantee to the public that this is none of those bubble companies which arose in such numbers five or six years ago, and almost every one of which ended in disappointment or ruin. The object of this Company is more a public good, and a grand ornament to the metropolis, than private emolument; though the Liverpool public cemetery (p. 353.), we understand, pays 8 per cent. At a late public meeting on the subject, where a great many persons delivered their sentiments, the greatest unanimity prevailed as to the necessity of such a cemetery, so that the time seems now arrived for carrying it into execution. The public will eventually be much indebted to Mr. G. F. Carden, the treasurer, who first proposed this plan for a public cemetery so long ago as 1826; and to Mr. Spottiswoode, for having seconded his efforts in bringing it before the House of Commons. — *Cond.*

The Royal Gardens and Gardeners. — Some of our correspondents have directed our attention to the demise of the crown, and have asked us to urge a change in the system of the management of the Royal Gardens. The family of Aiton, we are told, monopolises the whole of these situations, in consequence of which, it is said, not one of the whole is planted or kept in order as it ought to be. We dislike exceedingly the idea of directing attention to any one individual or family; because he, or they, may not, for any thing we know, be to blame for the present state of the different royal gardens. We must confess, however, that we have lately felt ashamed whilst showing some foreigners Kensington Gardens and St. James's Park, at the want of shrubs and flowers in the former, and at the thorns and privets with which the groups are planted in the latter. We have repeatedly found fault with the design and planting of the flower-garden at Windsor

Castle, and the grounds behind Buckingham Palace. As to the kitchen-gardens at Windsor, Hampton Court, and Kensington, they have long been beneath criticism ; the reason we have always understood to be, that money enough was not allowed for keeping them up. Indeed, we should think it much better, both for the King and the country, that there should be no royal kitchen or forcing garden at all, because we know that the supplies for the kitchen, the dessert, and for decorating the drawing-room, could be got both cheaper and better from Covent Garden Market and the Bedford conservatories. As to the different royal palaces and gardens, we confess we take little interest in the former further than as public buildings, and in the latter, Kensington gardens, for example, than as places for public recreation and enjoyment. As gardens and pleasure-grounds for the people, we would extend and enrich them to the highest possible degree ; but we would never put it in the power of any magistrate to erect such sumptuous lodgings for himself as the new part of Windsor Castle, or Buckingham Palace. The day, we trust, is gone by for these sort of things ; and, oppressed as this country is by debt, and the burden of providing for the paupers both of the lowest class and the highest, we ought to look rather to the example of economy shown us by France and America than follow the reckless extravagance of George IV. and former times. We are not of those architects or authors that think a king of Britain ought to have a palace as much superior in gorgeousness to the palaces of every other country as Britain is above every other country in wealth and power. We would have sumptuous public buildings, picture galleries, museums, libraries, assembly rooms, theatres, &c., which might be enjoyed by all, but we would lodge the first magistrate, whether a king, or, what we should greatly prefer, an elective *vorsitzer*, like a wealthy and respectable private gentleman, and nothing more.

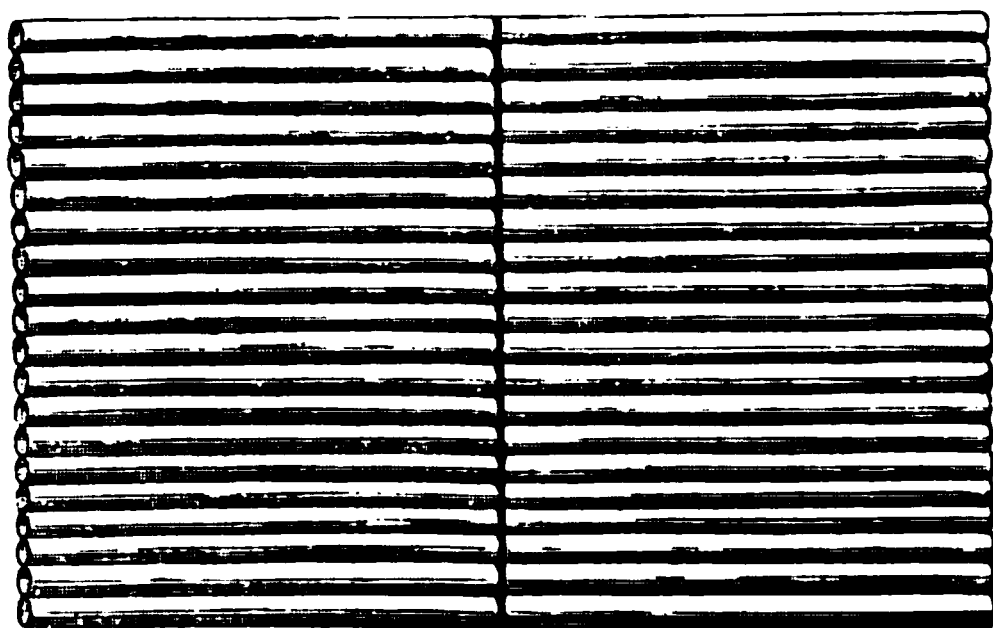
But, to return to the royal gardens : we, about a year ago, got a petition signed by the principal inhabitants of Bayswater, in favour of pulling down the north wall of Kensington Gardens, substituting for it an open iron railing, and, to preserve the seclusion of the gardens, raising within the railing a mound, 5 ft. or 6 ft. high in the centre, and 15 ft. or 20 ft. broad, and planting it with evergreens. After applying at five or six public offices, having been directed from one to the other, we were at last informed that we might write to the Lord Steward of the Household. We did so : but it was not to be expected that this high personage, who kept the House of Commons waiting three or four hours, would think fit to notice our letter further than to send Mr. Aiton to inform us that we should hear further on the subject. This, however, we have not yet done ; and, being in despair, we can only offer up our prayers to William IV., and say, that if His Majesty is desirous of being popular among his faithful subjects at Bayswater, and of rendering the entrance to London by that village the most noble of all the London approaches, he will give orders to substitute an open railing for a hideous, old, crooked, lofty wall, which is further disfigured by innumerable handbills and chalk-writings, and by numerous buttresses, rendered the receptacles of all kinds of impurities, from the end of Oxford Street to the Gravel Pits. The ground or plan line of the open railing ought to be in continuous curves, instead of abrupt angles, like this wall, and there ought to be several gates, with invalid soldiers or sailors as gate-keepers. We shall probably suggest other improvements in the interior of the gardens at a future period ; one of these would of course be that of turning the whole of the kitchen-garden into pleasure-ground, which would carry the line of open railing as far as Linden Grove. — *Cond.*

Cambridge Botanic Gardens. — We are now settling the necessary preliminaries for changing our botanic garden here, and I hope for the cordial cooperation of botanists in establishing one worthy of the University. My own ideas of what a botanic garden ought to be, will be found, I expect, to differ from those of some others ; but it seems to me that soil and aspect

are the first things to be considered, arrangement the second : in short, that a botanic garden should affect first the geographical distribution of species, and, when that is settled, then their natural grouping. A lithographic sketch of the beds (marked A, B, C,) with an alphabetical index of the genera, would be sufficient to direct any one to the different parts of a garden, in which the species of any genus were to be found. — *J. S. H. Cambridge, July 1. 1830.*

A picturesque Mass of Rock-work. — Mr. Brookes, being about to change his residence, begs to acquaint Mr. Loudon, that he has for sale an extensive and picturesque mass of rock-work, composed chiefly of considerable pieces of the rock of Gibraltar, adapted to the purpose of a vivarium, at present inhabited by an eagle, and several smaller rapacious birds. The structure is excavated in different parts for the seclusion of its tenants. The four principal entrances of the adyta are ample, and arched with rude portions of rock : there are likewise numerous cryptæ arranged irregularly, for various animals, and subterranean passages intersecting each other for their convenience and retirement. The whole covers an area of about 30 ft., and is upwards of 10 ft. in height, somewhat in the shape of a truncated cone, on the surface of which there is a spacious reservoir for fishes, aquatic plants, and oceanic birds, with a jet d'eau in the centre, ascending through an interesting specimen of rock much elevated above the level of the water, which is prevented from overflowing by a siphon, that conveys it through the mouth of an antique head of a gigantic reptile, nearly resembling that of an Ichthyosaurus. The interstices of the rock are verdant with alpine and appropriate indigenous plants ; these, descending over the stones, embellish and augment the pleasing appearance of the fabric, which would prove a beautiful object in an arboretum, or at the termination of a vista. The largest caverns were for a long period the domiciles of an uncommonly fine vulture, a white-headed eagle, an ossifrage, and a magnificent auriculated owl, all natives of the most inhospitable regions ; but such, however, as may be readily obtained. Those that remain are domesticated, and will be given to the purchaser : the two former birds were presented to the Zoological Society, and are now living. Occupying an angle in the garden there is a pilgrim's cell, constructed in a great measure of the jaws of a whale, having furniture manufactured of the bones of the same animal, and lighted by a circular stained glass window. Mr. Brookes hopes Mr. Loudon will accept his apology for troubling him with this detail, but conceives that gentlemen having occasion to consult him on horticultural subjects might avail themselves of this, perhaps the only means of raising a noble rural ornament with many tons of the rock of Gibraltar. — *Blenheim Street, Great Marlborough Street, June 24. 1830.*

New-invented Trap for Earwigs. (fig. 92.) — Nothing is more injurious



to the ~~few~~ sorts of wall-fruit than the earwig ; and nothing is more disgusting than to find that those hostile-looking insects have taken possession of it when brought to table. It being impossible to defend the fruit from their attack by any means applied to the trees, they can only be assailed by capture. This has

been the old, and is the only, expedient in practice to check the depredations of this annual plague on fruit walls. A bundle of hollow dry

bean-stalks is placed in the trees, as a lure for them to resort to during the day, as they are chiefly migratory during the night; but, though bean-stalks answer the purpose, they are of too fragile a substance to last long, or be so convenient in use as traps made of a more durable material. The inventor (a person well acquainted with the subject) has, therefore, proposed them to be made of tin, which will add durability to their efficacy as a trap. They are composed of a limited number of small tubes, soldered together; which, being first dipped in honeyed or sugared water, will at once attract the insects to feed, and invite them to remain in the tubes, from which they may be shaken out into a pail of hot water, as often as necessary. Such traps, kept in the trees during the ripening season, will preserve, undamaged, much fine fruit. — *J. M. Sept. 1828.*

A Broccoli Plant which has stood Six Years, and produced good Heads every Year. — Sir, Permit me to record, in your valuable Magazine, a rather singular instance of six years' growth of a spring white or cauliflower broccoli, from the same plant, in the garden of Lee Priory, the seat of Colonel Brydges Barrett. In the month of April, 1824, I sowed our broccolis, but when I cut them in the following spring, by accident I happened to leave a solitary plant, which stood rather aloof from the rest. The next year this plant produced, to my astonishment, as fine and beautiful a head as any of those which I had freshly planted. This excited my wonder and curiosity; I left it again and again, and now it is the sixth year, and it was but a very few days since that I cut from it a superb head! I enquired of several intelligent and well-informed gardeners of the surrounding neighbourhood, whether they had ever known such a thing, and, to my satisfaction, they, one and all, answered in the negative. I am perfectly well aware that there are many instances known and upon record of a second sprout, but it has never come within my practical knowledge, and I have been a gardener for more than five and twenty years, that the same root will produce for six successive years. Perhaps you might be induced to give me some information upon this curious and, as it appears to me, no less important point. In referring to several works upon gardening, I do not find a single instance mentioned that broccoli has been ever known to produce more than one (or, at most, a second) sprout from the same plant. I am, Sir, &c. — *Solomon Philips. Lee Priory, April 16. 1830.*

In answer to some questions respecting his plants, Mr. Philips sent us the following additional observations : —

The sprouts or shoots come from near the bottom of the stem in the second (but, to write more precisely, rather the first) year, almost in the same manner as in the Woburn Kale. They produced four heads of a middling size. In the third (or rather the second) year, the shoots came from the middle of the stem, and produced two remarkably fine heads. In the fourth (or rather the third) year, the shoots came from about the same place in the stem, or they might have been perhaps a little higher up, as in the last year, and brought forth three very fair heads. In the fifth (or rather the fourth) year, the shoots came as usual from the middle of the stem, and produced two very fine heads and a small one. In the sixth (or rather the fifth) year, the shoot, (for there was only one), came from near the top of the stem, and produced, as I have formerly stated to you, a large and beautiful head. The first year it was about 1 ft.; the second year about 1½ ft.; the third year about 2 ft.; the fourth nearly 2½ ft.; the fifth 2¾ ft.; the sixth about 3 ft., more or less; and the seventh, or present year, about the same. The stem is larger at the top than at bottom, which is not the case with the generality of broccoli plants. If it should be my good fortune to have this plant shoot in the following year, I shall certainly permit it to run to flower, and save some of the seed, which I now much lament that I did not do in this and the preceding years.

The soil is a deep, rich, and loamy one: without wishing to boast, I will add, that perhaps there is not richer and more productive land than this in

the whole county of Kent, and actually may affirm that there is not within twenty miles around. The land is so rich, so capital, and so yielding, in the garden here, that it requires but little manure; and the part in which this remarkable and curious broccoli plant has grown we have not manured for very many years, and for the last twenty years I think I may safely venture to affirm that there has been no manure whatsoever thrown upon it. It may be proper to add, that the part of the garden in which this plant stands is by no means exposed either to the air or to the sun. Indeed, the whole garden in this respect labours under immense disadvantage, as it strikes me, as it is surrounded by numberless trees, such as oak and elm, beech and fir. — *S. P. April 23.*

Remarkable Crops produced upon a very fertile spot in the Vale of York.— Upon land reserved for the autumnal crop of potatoes the preceding autumn, I planted brown Bath lettuce between the spot or rows where the potatoes were to be hereafter planted, and every two yards I planted a garden bean in the potato row itself. The neighbouring markets were supplied with early salads. The beans having such plenty of air were very firm and prolific. Secondly, Scotch cabbage crops; two early York, or sugar-loaf cabbages in the row, between each Scotch plant, and a full row of the early ones between each Scotch row, alternately. Another:—oats, barley, &c., drilled and cross-drilled into squares, then in the middle of every square a Scotch cabbage plant. I might name various other trials, but am afraid to trouble you further; and I have endeavoured to shorten my letter so much that I fear I shall be with difficulty understood. — *C. P. York, May 5. 1830.*

Naturalisation of Exotics, &c.— The *Canna indica*, *Blètia hyacinthina*, *Linum arboreum*, flourish and flower with me in the open border, without any other shelter than that afforded by a south wall. The former produces plenty of ripe seeds, and has increased so much as to prove troublesome. — *C. P. York, May 5. 1830.*

Seeds from Carthage.— Sir, I have only time to enclose two or three seeds of the small collection received by the Plover from Carthage:— No. 1. El Madrono (of which I received but three seeds); a tree of Popayan, bearing, as Mr. Charles Hauswolf acquaints Mr. Watts, one of the most delicious fruits of South America. It grows almost exclusively about the city of Caty, where the temperature ranges from 75 to 80° Fahr. Conservatory?— No. 2. Same paper, El Mechoacan, ó Rhubarbaro blanco; a convolvulus, with a purgative root. — No. 3. El Barbero; a convolvulus, with a pale pink flower. Vicinity of Turbaco. Stove?— No. 4. Quito Tomata, *Solanum Humboldtii*? fruit from 12 to 14 oz. Conservatory?— No. 5. La Bahagua; unknown. A spreading shrub, with pinnate leaves; leaflets oblong; flowers in a pyramidal spike, of a rich yellow. Tree 8 ft. high. — *W. Hamilton. Plymouth, June 3. 1830.*

We have sent the seeds to Mr. Mackay of the Clapton Nursery, who will no doubt report on them, and distribute the plants raised. — *Cond. June 10.*

SCOTLAND.

New or Rare Plants which have lately flowered in the Neighbourhood of Edinburgh, and chiefly in the Royal Botanic Garden; communicated by Dr. Graham, Professor of Botany in the University of Edinburgh, to Jameson's *Philosophical Journal* for July:—

Brachystélma crispum. “Several bulbs of this plant were collected in Southern Africa, by Mr. Bowie, and sent, with many other roots, in spring, 1829, to Mr. Neill, in whose stove, at Canonmills, it flowered in May last. It approaches *Brachystélma spathulatum*.” *Bot. Reg. t. 1113.*

Hybrid Calceolarias. “Mr. Morrison, gardener to Lord President Hope, at Granton, being aware that several of the finest species of *Calceolària* were shy in producing seed, suspected that this defect might be corrected by applying the pollen of certain kinds to the stigmata of others; and he first has had the merit of presenting to the florist, hybrids thus produced, which

equal, if they do not surpass, in beauty, any of the species of this handsome genus. Mr. Morrison's experiments have been confined to four species, all herbaceous, viz. *C. corymbosa*, *C. arachnoides*, *C. plantaginea*, and *C. Fothergillii*. He has succeeded in crossing the whole of these. *C. plantaginea* he finds most apt to produce seeds of itself, and most readily to fertilise others. The hybrids which Mr. Morrison has sent to the Botanic Garden are the following : —

1. *C. plantaginea-corymbosa*, raised from seed of *C. corymbosa*; produced by the pollen of *C. plantaginea*. An exceedingly handsome plant, with the foliage of *C. plantaginea*, and the outline of its flowers.

2. *C. plantaginea-arachnoides*; raised from seed of *C. arachnoides*, produced by the pollen of *C. plantaginea*. A large healthy plant.

3. *C. arachnoides-plantaginea*; raised from seed of *C. plantaginea*, produced by the pollen of *C. arachnoides*. Almost identical in appearance with the last.

4. *C. corymbosa-Fothergillii*; raised from seed of *C. Fothergillii*, produced by the pollen of *C. corymbosa*. Quite unlike any of the others.

Eutoca sericea. A pretty and hardy alpine, raised in the Edinburgh Botanic Garden in 1828, from seeds collected in Captain Franklin's second expedition to the arctic coast of America. Flowered first in spring, 1829.

Ferraria elongata. From Buenos Ayres, by Dr. Tweedie, in 1828, to Mr. Neill. Flowers expand about six in the morning, and decay about three in the afternoon.

Habenaria obtusata. From Montreal in autumn, 1829, and flowered in a cold frame at Canonmills in May, 1830.

Halenia Fischèrii. From Dahurica, to the Botanic Garden, in March, 1829, and flowered in the open border in June.

Hibiscus splendens. Raised from seeds sent by Mr. Fraser from New Holland, in 1828. Its only fault, as a cultivated plant, is its great size: but in its native situation it must present a most brilliant appearance. Mr. Fraser writes of it: — "This I consider the king of all the Australian plants which I have seen. I have it 22½ ft. in height. The flowers this season measured 9 in. across, were of the most delicate pink and crimson, and literally covered the plant."

Salvia rhombifolia. From Lima.

Schizanthus Hookèrii. Raised from seeds gathered on the Chilian side of the Cordillera of the Andes. Biennial?

Scilla pumila. A pretty little species, from Portugal, which flowered blue, and sometimes white, in the garden of David Falconer, Esq. of Carlisle, in May, 1830.

Vegetable Market. — June 1. Grapes, 3s. 6d. to 4s.; pines, 5s. to 6s. a pound; gooseberries, 6d. per quart; cucumbers, 6s. to 9s. per dozen; early cabbages, 6d. to 1s. per dozen; asparagus, 1s. 6d. to 2s. per hundred; rhubarb, 4d. to 6d. a dozen; new potatoes, 3s. a quart. Green pease grown here have been sold privately, but none have been exposed in the market excepting a quantity purchased in Covent Garden, London, and brought down by a steam vessel. They were as fresh and green to appearance as if they had not been above six hours gathered, and sold for 5s. the imperial peck. Tart gooseberries have also been brought by steam from London, and sold considerably cheaper than those raised here. (*Scotsman*.)

The Infant Schools in Edinburgh, Glasgow, and Aberdeen are in a most prosperous state. Mr. Wilderspin has given a series of lectures in Leith on his principles of infant education. A most interesting account of the exhibition of the Edinburgh infant school will be found in the *Scotsman* of the 5th of May, and abstracts of Mr. Wilderspin's lectures in subsequent numbers of the same excellent journal.

Two Cooperative Societies have been established at Perth, and one is now establishing at Dundee. A cooperator, writing on the subject in the *Dundee Courier*, recommends buying and selling for ready money only, keeping

a strict watch over office-bearers, frequently auditing the books, and the cultivation of unanimity and good feeling.

Annat Garden, June 14. — . . I had a very pleasant *jaunt to the Lothians* I found there, as at home, generally speaking, the same effects following the same causes. Apples a scanty crop, the result of a preceding wet autumn, producing imperfectly ripened wood, and a weak blossom, which was cut off by a severe frost in the beginning of April, and 8th May; late flowering varieties setting rather better, but apple trees, in general, exhibiting lassitude, from over-exertion last season. At Lufness, Arniston Hall, and Preston Hall, pears on walls abundant, and many of the new varieties from France in full-bearing. Apricots and plums fair crops. At Arniston Hall saw the original John Monteith's pear tree standing side by side with one of the largest and oldest yew trees in Scotland, noticed in some Scottish statistical works. The stem measures at 4 ft. above the ground, 17 ft. $\frac{1}{2}$ in. in circumference, and the branches cover a circumference of 180 ft. The pear tree, of which I may hereafter send a drawing, is supposed to have stood three centuries, and, tradition says, was named after a gardener who lived at that place, and raised it from seed. Mr. Pearson, the very intelligent gardener now at Arniston Hall, informed us that he had ripened some fruit of this variety on a wall, but found it dry, mealy, and every way inferior to the fruit grown on the standard, except in size. A Turkey apricot tree at this place covers 63 ft. of an east wall, 16 ft. in height, bears regular crops, and ripens about a week later than the same variety on a south aspect. Vegetation, by the flowering of herbaceous plants, seemed to be in the same stage of forwardness in the Lothians as in the early districts of Perthshire. Much of the corn crops in the Lothians are drilled; but oats have suffered severely this season by what is there called the "tulip root," a disease, the cause of which is not hitherto properly understood. Lucern is cultivated near Musselburgh, and, from some recently sown there, it would appear the practice deserves extension. The woods at Arniston furnish a fine lounge to the botanist. Mr. Mathieson [an old friend of ours?], gardener at that place, who to his other professional qualifications adds a considerable knowledge of plants, pointed out the habitat of the parasite the *Lathræa squamaria*. The *Impatiens noli me tangere* was growing profusely in the woods near the garden, and Mr. Mathieson thinks it a native. There are several rare plants cultivated in the hot-house and garden at Arniston. The flower grounds on both sides of the river Esk are in excellent keeping, and possess an interest which, without water, could not be easily imparted. — *A. Gorrie.*

The Wheat Fly. — The wheat is in the ear, and in general is looking well, but we are very anxious just now about its fate with reference to the fly. I found, upon examining my father's wheat the other evening, that the insect was in existence. I found dozens of them busily at work depositing their eggs among the soft chaff of the young ear. We are anxious that the present cold weather should continue for another ten days, to prevent the eggs from hatching, until the wheat be sufficiently hardened, and beyond the state which affords nourishment to the maggot. Another year or two of the wheat-fly will make two-thirds of the farmers here bankrupts. Yours truly. — *P. Bell. Mid Lioch, Auchter House, June 24. 1830.*

IRELAND.

Belfast Horticultural Society. — The Society's first Show of flowers, fruits, &c., took place on June 5. The judges on the occasion were, the Marquess of Donegall, Sir Robert Bateson, Bart., John Agnew, Esq., John Montgomery, Esq., Mr. L. Farrell, and Mr. T. Drummond.

Flowers. Geraniums, Mr. S. Millikin, gardener to Sir Robert Bateson, Belvoir. Six Geraniums: 1. Mr. A. Anderson; 2. Mr. S. Millikin. Bouquet, Mr. J. Scott, Mr. A. Dixon, and Mr. J. Gamble, gardeners to James

Stewart, Esq., Cherryvale. Ranunculus, Mr. Lindsay, Belfast. Anemone, Mr. J. Gamble. — *Fruit*. Cherries, Mr. J. Scott. Strawberries, Mr. C. Cummins, gardener to the Marquess of Downshire. — *Culinary Vegetables*. Cucumbers: 1. Mr. J. Scott, gardener to the Marquess of Donegall, Ormeau; 2. Mr. A. Anderson, gardener to Charles Brownlow, Esq., Lurgan. Cauliflower, Edward Walkington, Esq. Potatoes, Mr. J. Walker, gardener to N. Batt, Esq., Purdysburn. Mushrooms, Mr. J. Scott. Asparagus, Mr. A. Dixon, gardener to W. Montgomery, Esq., Rosemount. Turnips, Mr. A. Dixon.

Some splendid specimens of plants were exhibited. Among the contributors we may enumerate the Marchioness of Donegall, Lady Bateson, Mrs. J. Stewart, &c. There were also some beautiful plants from Mr. Brownlow's, at Lurgan; and one fine specimen of the Indian rubber tree, *Ficus elástica*, together with a geranium in bloom, upwards of 10 ft. high, from Ormeau. We particularly noticed a basket of strawberries, sent by Mr. Cummins, and two pines, which did him great credit. (*Belfast News-Letter*, June 8.)

Flower-Gardening. — "Where the habitation itself is so wretched, the ornament of a garden is not to be expected. No rose or woodbine climbs round the door, with some warbling bird suspended near; nor is there the least plot appropriated to flowers. The houses of the more wealthy are remarkably deficient in this respect, although they have a milder climate than England, and might easily preserve the choicest plants. The lady even does not indulge in a few pots of rarities at her window. The disinclination of farmers to become gardeners admits of explanation, — they are gardeners on a larger scale; but that persons otherwise occupied should not be cultivators, is less easy of solution." — *Bicheno's Ireland and its Economy*. London. 1830. Small 8vo. p. 34.; a very interesting work, written by a man totally free from prejudice, and with the best possible feeling. It seems to us that the next best thing for Ireland, after Catholic emancipation, would be, the withdrawing, as the livings fall in, of the national church establishment. — *Cond.*

ART. IV. *Remarks on the Gender and Accentuation of Botanical Names.*

It is not without reason that some of our correspondents complain of variations in the gender ascribed by different botanists to the same or similarly derived generic names. Negligence on the part of the framers of new terms, and the adopters of old, has introduced much confusion into the literature of the science; and though this matter may seem beyond the province of a work devoted to practical gardening, nevertheless we will throw out a few suggestions for its rectification, in the hope of attracting attention to the subject from some of the lights of the botanical world.

Gender. — Though many of the smaller plants depart from it, the general rule is, that all are feminine: and it would have been well if the framers of new names had adhered to the general rule, instead of increasing the number of exceptions.

In names adopted from the writings of antiquity, one might suppose there was but little room for error; yet even here it has crept in: for instance, *Potamogeton*, *Ulex*, and *Euonymus*. The remedy in this case is sufficiently simple: the gender used by the ancients should be invariably retained.

In names composed of two or more Greek words, the gender should be that of the terminating word, unless the Latinised termination renders it incompatible with Latin rules: for instance, *Podocarpus* should be masculine,

as compounded with *καρπος* ὁ; while *Sorocéphalus* should be feminine, as compounded with *κεφαλη* ἡ; and where the terminating word is common, as *κλαδος* ὁ, ἡ, or *το*, in *Gymnócladus*, the feminine should be used, as most consonant with the general rule. Where the Greek termination is retained, the Greek gender should be retained also: but in some cases the Greek word has been Latinised with a termination in which the retaining of the Greek gender would clash with Latin rules. Of the former, *Anigozánthos* furnishes an example, being neuter, as compounded with *ανθος* *το*; of the latter, *Cheiránthus*, which is made masculine, though compounded with precisely the same word, because the neuter gender would be clearly inadmissible. It were much better feminine; and though custom may enforce adherence in this termination and in similar ones, it is to be hoped that botanists, in future compounds where a change of termination leaves the gender at their disposal, will comply with the general rule. *Enkiánthus* is made feminine, and forms one among many examples of the discrepancy which has arisen from want of adherence to some general principle. With regard to names compounded of pure Latin words there can be no difficulty.

For the information of the gardener we may here notice that an arbitrary change of termination and gender is sometimes apparent, where in reality none exists: for instance, in *Peliosánthes*, the termination *anthes* is from *ανθη* ἡ (not *ανθος* *το*), consequently feminine; and in names ending in *stylus* masculine, and *stylis* feminine, the former is from *στυλος* ὁ, the latter from *στυλις* ἡ. In the same way, *Theotròma* fem. and *Bubròma* neut. (as in Steudel's *Nom. Bot.*) might be defended, the latter by *βρωμα* *το*, the former by *βρωμη* ἡ. *Abròma* is neuter in *Hort. Cantabrig.*, feminine in *Encyc. of Plants*, and either might be justified. It would be better to make them neuter, from *βρωμα*, as the most direct etymon.

Principles of Accentuation. — As, in spite of the greatest vigilance, typographical errors will sometimes creep in, it may not be out of place here to state the principles by which the accentuation of botanical names is regulated, with regard to such words as are not to be found in a dictionary; in order that the intelligent gardener, when he meets with a word accentuated contrarily to what he has been accustomed to see, may be able to decide for himself as to its propriety.

Of the Names of Natural Orders ending in *æ* the penult is short, as *Rhamnæ*: except where the penultimate *e* is preceded by another vowel, when it is lengthened to facilitate pronunciation, as *Paronychiæ*; and those in which the penultimate *e* is long in the generic name from which that of the order is formed, as *Thymelæa*, *Thymelææ*; *Orobanchè*, *Orobanchæ*. Those in *inæ*, derived from names of plants, are short in every case, as *Scrophularinæ*.

The Quantity of Names of Genera is regulated by that of the etymon, as *Anictangium* (*αγγειον*), *Trióstëum* (*οστειον*). Of those formed from words with a long final syllable, by changing the final letter or by subjoining a letter or syllable, the penult is long, as *Microtëa*, from *μικροτης*; in other cases, the common rules are followed, as *Calàthëa*, from *καλαθος*. Compound words should be considered as one word, not two, and accented accordingly, as, *Coccóloba* (*κοκκος λοβος*), not *Coccolòba*.

Words derived from Names of Persons appear to be regulated by the quantity of such names in the original language, as *Sellòa*, *Averrhòa*: so do those formed from the aboriginal appellations, as *Remirèa*. Where the quantity is not ascertainable, they should follow the general rule; and perhaps it would be better to follow this rule in all cases, as the sound of several names, *Cattley* for example, cannot be retained with propriety: in the instance adduced, it must either be *Cattlëya* or *Cattlèya*. There are numerous words ending in *era*, derived from names of persons, in which the penult is constantly made long, in the teeth of a very comprehensive general rule; if not irreclaimable, these should be reduced to order.

We hope we have said enough to draw attention to this subject. From nothing but its comparative insignificance could such confusion of quantity and gender have been permitted to blemish the science so long ; a confusion not the less inexcusable because so easily rectified. — *R. N. June, 1830.*

ART. V. *Retrospective Criticism.*

ARISTIDES and the Epsom Nursery. — Sir, In p. 357. you have published a letter signed "Aristides," calling you to account, in no very measured terms, for "puffing" the Epsom nursery. This letter appears to have excited your just indignation ; and it has induced me to refer to the article (signed Alpha, p. 115.) which called it forth. I really cannot see any reason why you should be blamed for having inserted in your Magazine such an article as that of Alpha ; or Alpha himself, for having sent it to you for that purpose. Why is this matter-of-fact statement of "new or rare plants" which have flowered during the space of two months, at the Epsom nursery, to be called a *puff*? Does it not fall within the legitimate province of your Magazine to notice such things? Surely it may be interesting to many of your readers to know where and when such and such new or rare plants have flowered ; and to some you will be performing a service, by informing them where they are to be obtained. Why, too, need Aristides indulge in sarcastic remarks on the Epsom nursery? I visited that establishment, for the first and only time, in the month of June, 1829 ; and, without meaning to *puff*, I must say, in truth and justice, that three things particularly pleased me on that occasion, viz. the polite attention and liberality of Messrs. Young, the zeal and assiduity of their excellent foreman, Mr. Penny, and the collection itself. With regard to Messrs. Young, I never in my life laid out five shillings with them ; but they voluntarily gave me several rare plants, and many others were offered. In Mr. Penny, I witnessed a thorough-going love for his profession, and a most ardent thirst for information on botanical subjects ; accompanied, too, with a modesty of behaviour, and docility, in which many a young man of not half his attainments is deficient : and, as to the collection itself, it was both rich and extensive, containing very many rare plants ; and many which, to me, who am no stranger to the interior of nurseries, were entirely new. However galling to the private feelings of Messrs. Young the letter of Aristides may be, as nurserymen they can, in no way, be injured by such unjust and illiberal remarks : on the contrary, I do hope and trust that what has occurred may be the means of calling them and their interesting collection more into notice ; and that some of your readers may be induced to visit the establishment at Epsom, in order that they may judge of its merits for themselves. Yours, &c. — *B. Coventry. July, 1830.*

Edwards's Botanical Register. — Sir, You state, in your last review, that the *Botanical Register*, having adopted your proposed accentuation of names, has now therefore your unqualified approbation. However desirable the improvement may be, and complimentary to the proposer of the improvement, it must adopt some other changes before it will obtain the *unqualified approbation* of its subscribers. In the first place stands the frequency of publishing the same plants which have before appeared in other works. As an example : in No. V. for this month (July, 1830) there are no less than three plates of plants which have already appeared in Curtis's *Botanical Magazine* : this is somewhat hard on subscribers to both works. Another charge against the *Register* is the imposition of an additional shilling for a single leaf of index at the end of every twelve numbers. On what plea can such a charge be made. The work is dearer by 6s. per volume than the *Botanical Magazine*, and no one will be hardy enough to assert that it is

superior to that work. The plates of Curtis's *Magazine*, as now published, may be held up as the most correct and beautiful portraits of plants that have ever been published at the price: and every one acquainted with botanical subjects fully appreciates the talents which Dr. Hooker shows in the description. I make no apology for qualifying the praise which you have given the *Register*, for I feel a double right — the right of truth, and that of an original and constant subscriber to the work. I am, Sir. &c. — K. July, 1830.

Lime-water. — Sir, A correspondent, J. M. of Brighton, speaks of having used *very strong* lime-water for destroying the gooseberry caterpillar without effect, and a note is added by yourself, doubting the failure of lime-water, if made sufficiently *strong*. There is, in fact, no such thing as *strong* lime-water: put as much lime and as little water together as you please, and even use boiling water for the purpose, and you will find only one grain of lime *dissolved* in about 500 of water. Lime is not, like sugar or salt, soluble in almost any proportion in water, but very sparingly so, and you can never get a strong *solution* of it to use *clear*. You may make milk or cream of lime, by mixing it with water, but it is then mechanically suspended, and not chemically dissolved, and therefore not to be called lime-water. This cream of lime is a useful application to the stems and branches of trees, if used in spring, by destroying the eggs of A'phides, and other insects, which are deposited about the leaf and blossom buds. Mr. Norris, of Norwood, near Brentford, who has extensive plantations of gooseberries, finds no remedy so effectual for getting rid of the caterpillars as the fingers and thumbs of women and boys, applied diligently and daily, while any remain on the trees. Yours. — Wm. Stowe. Buckingham, May 30. 1830.

Our correspondent is perfectly correct in theory; nevertheless, we know from experience that lime-water can be supersaturated to a certain degree, for a short time, without rendering it muddy. — *Cond.*

Mr. Gowen's notion of Hybrids (Vol. I. p. 70.). — Except in a very few instances, plants in their native climate seldom produce any thing but a facsimile of the parent, more true indeed than man himself, who, like plants cultivated for experiment, enjoys all that art and nature can afford, thereby weakening or strengthening the parts so as to produce the present discordance of features that pervades even a single family. — Jno. Newman. Royal Botanic Gardens, Mauritius, March 12. 1830.

Finlayson's Harrow and Wilkie's Brake. — Sir, I am compelled to agree with Mr. Wilkie (Vol. V. p. 655.) that his brake "has a nearer resemblance to Finlayson's harrow than to any other implement of the kind." This is a candid admission of Mr. Wilkie; for, in truth, he has *ingrafted* Finlayson's regulator on it, used his wheels, and inserted his tines: the tines, it is true, are placed in a triangular manner, like the old Ayrshire brake of the last century. I now come to Mr. Wilkie's claim of originality of the tine for his late father: this is a charge of a more serious nature, and requires to be refuted. It is now about 40 years since the Hon. Admiral Keith Stewart began to cultivate lands in the parish of Muirkirk; and, after going through the different processes of draining, lining, ploughing, &c., he finished by harrowing. "These harrow-slices were, in the next place, torn and worn to pieces, by drawing across them a ponderous *brake*, having tines in the form of a *coulter*." (*British Farmer*, p. 89.) This, I conceive, will be considered as most unquestionable proof of the existence of coulter-tines before those of Wilkie. But, what is more, this brake had the form of an "isosceles triangle" too; and had tines exactly like c, in fig. 141. Vol. V., claimed by Mr. Wilkie. Again, the tine claimed by Mr. Wilkie, a drawing of which he furnished for the *Farmer's Magazine* for 1821, is not similar to Finlayson's, or that claimed for his father, in your Magazine; but merely a *duck leg and footed tine*, like Weir's cultivator (represented in the *Encyclopædia of Agriculture*), or the Norfolk grubber, both of which have been in

use at least 15 years. I have now made it evident that coulter tines have been known in Ayrshire for 40 years, and the duck-footed ones for at least 15: therefore, Mr. Wilkie might have copied from those; but my brother's neither resembles them in appearance nor principle. I am, Sir, &c. — *Robert Finlayson. London, May 20. 1830.*

ART. VI. *Queries and Answers.*

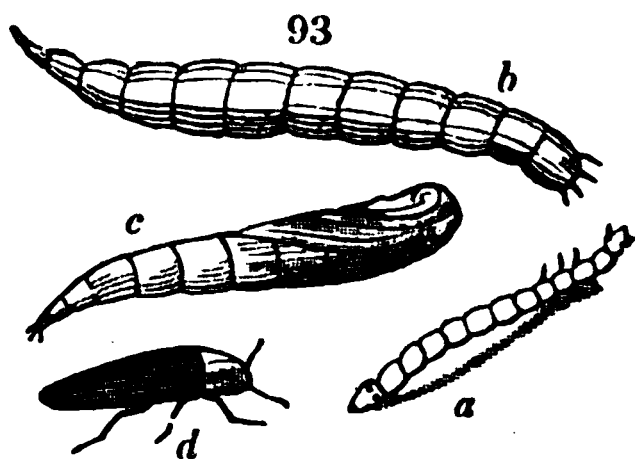
PREVENTIVE for Glass cracking in Green-houses.—Sir, May I request you, or one of your correspondents, to inform me of a preventive for the cracking of glass in green-houses, from which I was a great sufferer last winter, although I used but little fire, as I presumed it must proceed from the unequal temperature of the external and internal air. I was, however, somewhat staggered in my opinion by perceiving the breakage to be confined to the upper (or roof) sashes, and also that it took place where there was no artificial heat of any kind applied. — *A Subscriber. Farleigh, near Maidstone, Kent, June 24. 1830.*

We have little doubt that the breakage in question has been produced by the freezing of the water which, in the case of glazing with the usual broad lap, is retained in the interstices of those parts of the panes which overlap each other. The lap need never be broader than a quarter of an inch; but where the panes are not above 5 in. wide, one eighth of an inch is quite sufficient. Half an inch in roof sashes, unless they are placed at an angle of not less than 45°, is almost certain of producing breakage, unless the temperature within is sufficiently high to prevent the water retained between the panes from freezing. — *Cond.*

To destroy Rats. (p. 223.) — Your correspondent may hunt them with dogs, but I should recommend him so to construct his banks, that they shall be shallow and with a very gentle slope for about one yard or so above and below the water mark, and then to Macadamise the same with stones full 6 in. thick. This will effectually prevent the rats doing harm to the puddle, as it is always between wind and water where the mischief is done. — *C. B. York, May 5. 1830.*

Wire-worm (E'later ségetis); in answer to G. C., Bucks. — The wire-worm (fig. 93.) is the E'later ségetis of modern entomologists: it belongs to the order Coleóptera, and passes successively from the egg to the state of a small worm (a), larger (b), chrysalis (c), and perfect insect (d). — *Cond.*

A Weevil which eats Fruit Trees in the Nursery. — Sir, I some time ago noticed a communication by the late Mr. Hervey of Comber (Vol. V. p. 237.) respecting some insects that had destroyed his fruit trees. For the last two years I have been very much annoyed with what we consider the same beetle; but as Mr. Hervey did not state the mode in which they went to work, I have taken the liberty of sending you a few in a small box by our friend, Mr. R. Rodger, who is a very keen horticulturist. I find them commence their ravages in the months of February and March. As soon as ever it gets dark, they leave the earth, where they appear to burrow through the day, and ascend to the very top of the apple and pear trees, and then turn their heads downwards, and eat off the bark and buds in a screw-like manner, till they reach the foot of the tree. I find them worst on the trees I cut over for dwarfs; for, in the course of two or three nights, they seldom leave a piece of bark or buds for 4 to 6 in. down.



My nursery ground lies on the banks of a small stream, and is of a light rich soil, about 3 ft. deep, under which is a stratum of gravel from 2 to 3 ft. deep, lying on a bed of strong clay. If any of your entomologists can give me a description of the most likely way of getting these insects destroyed, I should esteem it a particular favour. I am, Sir, &c. — *Jo. Dykes, Kilmarnock, June 21. 1830.*

The insects sent from the Comber nursery were not a third part of the size of those received from Kilmarnock, and, as mentioned at the time, they belong to the *Dermestes* family. The Kilmarnock insect is a weevil, the *Otiorhynchus notatus* of Stephens, *Cat. Brit. Ins.*, p. 172., the *Curculio vastator* of Marsh, *Brit. Ins.*, p. 300. It may be said to be without wings, and what, in usual cases, are the wing covers, are attached to the skin, thick and hard like the shell of a tortoise. Lime water we should think would have no effect on this insect, and a decoction of tobacco or monk's-hood, would be too expensive. Water heated to 150° or 160°, and applied in the evenings after the insects had come out, might possibly do something. In a nursery in the neighbourhood of Stutgard the trees are brushed over in the winter time with a mixture of cow-dung and loam, to guard them, as we were told, from some species of beetle which attacked them in the spring. This plan might be tried.

Mr. Rodger, who is mentioned in this communication as a "keen horticulturist," is the landlord of the principal inn (the Turf Inn) at Kilmarnock, to which a garden, upwards of a Scotch acre in extent, is attached, and part of it beautifully laid out as pleasure-ground for the gratification of guests. There is also in the house a small library, and different London newspapers and magazines are taken in. We mention these things to stimulate others to follow so excellent an example; and we hope that every gentleman's gardener will not only try to persuade the publicans and innkeepers of his neighbourhood to enlarge and improve their gardens, but will lend them his advice and assistance in doing so. Every gardener may be able to spare a number of seeds and herbaceous plants; and though he cannot be expected to spare trees or shrubs, yet he will do a man who knows little of plants a great service by giving him a list of what he ought to purchase from the nurseries. As climbers and twiners, *Lonicera flexuosa*, *Wistaria Consequana*, *Eccremocarpus scaber*, *Clématis florida*, *Atragene austriaca*; as wall trees and shrubs, *Chimonanthus fragrans*, *Magnolia purpurea* and *conspicua*, *Pyrus japonica*, *Rosa odorata*, *Noisettia*, *Boursaulti*, *Grevilli*, and *Drummondii*; as bush shrubs, *Hibiscus syriacus* (all the varieties), *Arbutus Unedo*, *Aucuba japonica*, *Viburnum pyrifolium*, *Photinia glabra*, *Rhododendron*, *Azalea*, *Andróméda*, *Vaccinium*, and *Daphne*, several species of each; as trees, *Pyrus spectabilis*, *Prunus Mahaleb virginiana*, *Amelanchier canadensis*, *Halësia tetraëtera*, *Cercis Siliquastrum*, *Acacia glutinosa*, *Crataegus Oxyacantha coccinea*; besides the commoner showy things; may and might ornament every publican's garden and house-front south of Inverness. Mr. Rodgers has a particular plan of growing celery, of which he has written an account that will appear in our next. — *Cond.*

The Sayings as to Bees (p. 223.) have been current in Essex so long as I can remember, and, as I am informed, from time immemorial. — *D. French. Harlowe, April 26. 1830.*

The Sport of Plants. — Sir, Can any of your readers give a physiological reason for the sport of plants. I sowed the seeds of a cockscomb plant which was of a most beautiful crimson colour, and several of the plants showed yellow flowers, though I had carefully removed those that were yellow the year before, previously to their forming any pollen? Yours, &c. — *W. S. Buckingham, May 31. 1830.*

Stools of Ash Coppice. — Having observed, in cutting down coppice-wood, that occasionally an ash stub was to be met with that did not shoot forth

again, although apparently perfectly healthy and vigorous, I have been induced to grub up several, after waiting two years to see the result. Can you assign any cause as well as remedy for it? — *A Subscriber. Farleigh, near Maidstone, Kent, June 24. 1830.*

A Blight amongst the Oaks. — Sir, If you, or some of your numerous correspondents, can satisfy my curiosity on the following points, you will much oblige a subscriber to your Magazine: — Whether a blight amongst the oaks has been observed throughout the kingdom the last two springs. Whether it has, as in the east of Sussex, been peculiar to some districts. What is the name of the insect whose caterpillar causes such destruction amongst the oaks. Whether it is the same as the caterpillar that destroys the leaves of the quickset hedges and the gooseberry. What is the cause of some oaks remaining uninjured in the midst of groups that are stripped of their leaves and young shoots. Whether the trees are permanently injured, or only checked in their growth for one year. Any other information that can be given on the subject will be valued. I am, Sir, &c. — *Quercus. June 12. 1830.*

The Eucalyptus, of which a specimen was sent us by H. J. H., with a request to know its name and culture, is an Australian genus of the natural order *Myrtaceæ*, easily known by its dotted leaves. There are a great many species, but few of them defined, so that the whole family is in a state of confusion. In their native countries they form the most gigantic of the timber trees, but in Britain they are generally kept in a green-house or pit, and have not yet flowered. They are easily propagated by cuttings, are much hardier than the common myrtle, grow freely in any soil, and though they are killed down to the ground most winters, when planted in the open air, in the neighbourhood of London, they seldom fail to spring up again. With Mrs. H., at Belfast, in the south of Ireland, and in Devonshire, we have no doubt they would attain the size of forest trees. — *Cond.*

The following Species of Iris are still wanting in my collection: — *Iris livida Sweet*, *longiflora Sweet*, *flavescens*, *flavissima*, *ibérica*, *gracilis*, *longispatha B. M.*, *ventricosa Pall. Itin.*, tom. iii. t. b. f. 1., *tenuifolia, Pall. Itin.*, tom. iii. t. c. f. 1., and *lacustris Nuttall*. I shall be obliged to you if, in a future Number, you would direct the attention of nurserymen to these plants, and also give me any information regarding *Lilium pulchellum* lately introduced by Messrs. Young. I hope you will continue to insert the new plants introduced by these gentlemen, whose exertions in the cultivation and introduction of new and rare plants deserve the gratitude of every zealous botanist. — *David Falconar. Carlourie, near Edinburgh, June 24.*

Hybrid Melons. — My object in addressing you now is to call your attention to what I conceive an anomaly in good gardening, and which I have met with, in several instances, this summer, in the gardens of the nobility; and that is, the cucumbers, melons, gourds, and pumpkins, all growing in the same space, and, in fact, fast approximating. Now, I am persuaded that strange hybridous productions *must* be the result of this. What flavour can these melons be expected to acquire? It is true, according to *present* impressions, when *size* only seems a desideratum, the object will be fully attained. I hope to see this remarked upon in your next Number, by yourself or some of your able coadjutors. — *P. Lauder. Cardiff, June, 1830.*

We believe that the melon will not mule with either the cucumber or the pumpkin; but every gardener knows the difficulty, where different sorts of melons are grown in the same melon-ground, of preventing their muling. Possibly, however, all the *Cucurbitaceæ* may mule: we shall be glad to learn the experience of others on this subject. — *Cond.*

Ants on Melon Plants. — Sir, I should wish much to have your own opinion as to whether ants are injurious to the growth of melon plants when they abound very numerously in the frames; and what is the best method for getting rid of them? — *A Constant Reader. May 4. 1830.*

They are generally considered injurious; but a toad or two, if put in the frames, will soon devour them. — *Cond.*

Seeds of the following Species and Varieties of the Melon Family are wanted by a correspondent, a private gentleman, who is devoting himself to the culture of Cucurbitaceæ. They may be addressed to J. C. K., and left with Mr. Charlwood, Russell Street, Covent Garden, who will pay for them.

Melons named in Encyc. of Gard., Montague Cantaloup, Early Golden Cantaloup, Smooth Scarlet-fleshed Cantaloup, Fair's Romana, Oval Romana, Small Portugal or Dormer, Black Portugal or Galloway, Dampsha, Salonica, Sweet Melon of Ispahan, Polignac.

Melons mentioned by Abercrombie and others. Musk oblong ribbed netted, Oblong smooth-rinded, Round smooth green-rinded, Round white-rinded.

Melons named in Hortus Kewensis. Early Leopard, Bosse's Early Rock.

Melons brought to England by Dr. Walsh. Round snow-white Gourd, from Constantinople, and an extremely delicate Melon from Angora.

Melons grown by, or Fruits sent to, the Horticultural Society. Hewson's Emperor, a new variety, ten sorts of Persian Melon, Daree or Datee Persian Melon, Sir Gore Ouseley's Persian Melon, Melon d'Ananos, Gurmuck, Smooth Valparaiso.

Melons grown by the Horticultural Society. Syrian Cucumber, Nepal Cucumber, weighing 12 lb., Fluted Cucumber from China.

Miscellaneous Melons. Zatte small round Melon, Surinam, Melksham, Willox's Fame, Purvis's netted Romana, Wimbledon, Green-flesh, small American Nutmeg.

Various Species of Cucurbitaceæ. Cùcumis Châte, or Broad-leaved Egyptian; *C. prophetarum*, with green and yellow stripes, bitter; *C. africanus*; *C. acutangulus*, common, eatable; *C. muricatus*; *C. pubescens*; *C. indicus striatus*; *C. anguinus*; *C. maculatus*; *C. operculatus*; *C. Elatèrium*, not the Momórdica. Cucúrbita umbellata; *C. hispida*; *C. mammeata*. Lúffa fœ'tida. Melóthria péndula, fruit the size of an olive. Momórdica Charántia. Lúffa muricata, senegalensis, operculata, cylíndrica, trifoliata, pedata, lanata, echinata, dioica, spicata. Sicyos parviflora, vitifolia, laciniata. Trichosánthes scabra, fœtidíssima, nervifolia, caudata, cucumérina, tricuspidata, pilosa, tuberosa, laciniata. Any of the genus Bryonia. Any other varieties of Melons or Cucurbitaceæ which may be considered new or scarce, or not likely to have been known to me, will be highly acceptable. I am more than any thing desirous of the Cùcumis Châte. — J. C. K. *Levant Lodge, near Worcester, June 20. 1830.*

Failure of early Charlton Peas. — Sir, In answer to your worthy correspondent Pisum, I beg leave to state it as my firm opinion, that the Charlton peas were, notwithstanding the philosophical remarks of the seedsman, old seed. I admit that the Charlton is a more tender pea than many of the Hotspurs, as I have had them cut off by late spring frost, when other sorts have suffered but slightly; but I never knew them fail of coming up when other sorts would come. It is probable that those sown on the 13th of January might fail; but those sown on the 6th of February, from the favourable account given of the soil, and the weather which followed, I feel convinced, would not have failed had the seed been good: at the same time, I am far from saying that the seedsman knew them to be old seed. However, I would recommend to Pisum, always, in future, to sow a few seeds of all his principal crops in small pots, one of each sort, and place them in a vinery (if he have one), or hot-bed at work, or even window of a dwelling-house. This is the test by which I always try my seeds; and if, by chance, I have had them fail in the ground, and could produce the specimen in the pot, it has saved the credit of the seedsman, and of myself. I always sow them the same day in the pots as I sow in the

ground for a crop. I am, Sir, yours, &c. — *D. French. Harlowe, April 26. 1830.*

Butter from the Milk of a Cow fed with Turnips. — Sir, At p. 368., I find a statement upon the subject of the taste of butter from turnips. I have found that this disagreeable taste may be prevented in two ways: the one, by pouring boiling hot water into the *bowls*, to the quantity of, say, a pint, *simultaneously* with the milk, after milking. I know this to be effective. The other is, by dissolving an ounce of nitre in a pint of water; and, according to the size of the *cream-pots* or reserves, put in a quantity (say one fourth of a pint) to the cream from three good cows in a week, but to be put into the cream-pots, &c. before the cream. What the *rationale* of the action in either case may be, I leave to the chemist. I know that either (but, in preference, the first) will effect the purpose. At the same time, I should say, that although hot water may quicken the process of churning, when put into the churn, it has a very detrimental effect on the quality of the butter: I think, worse than the turnip. I am, Sir, &c. — *J. Clarke. Dodworth, near Barnsley, June 3. 1830.*

Work on Cider-making; in answer to A Subscriber, June 24. 1830. — The best directions for making cider, we should suppose, may be found in Lardner's *Cyclopædia*, vol. i. of Domestic Economy. There is also Crocker's *Art of Making Cider*, 12mo, 1799; and excellent directions are contained in Knight's *Treatise on the Apple and Pear*. On the whole, we think Lardner's volume the most complete and scientific. — *Cond.*

South American Clover. — A friend gave me some seeds last year, which he called South American clover. I sowed them last spring: the plants are now upwards of 4 ft. high, and will reach 10 ft. It is more like a *Medicago* (lucerne) than clover; and the seeds have the exact smell of the *Anthoxanthum odoratum*. I have not seen the flower: perhaps it is known and cultivated by some of your readers. I am, Sir, yours, &c. — *W. S. Buckingham, May 31. 1830.*

ART. VII. Horticultural Society and Garden.

MAY 18. — *Read.* On the cultivation of Epiphytes of the Orchis tribe; by John Lindley, Esq. F.R.S. &c., Assist. Sec. Account of the Method of obtaining very early crops of Green Peas; by Thos. A. Knight, Esq. F.R.S. &c., President.

Exhibited. A dish of forced Cherries, and a forced Cherry tree, from Mr. B. Law of Northampton. A branch of Hawthorn, which, having been cut from the root, in a hedge-row, had, nevertheless, continued to vegetate for several years. It appeared to have been naturally inarched upon a neighbouring plant. It was exhibited by Mr. Wallis, residing at Mrs. Berenger's, Streatham, Surrey. A bundle of Asparagus, consisting of 125 heads, weighing 28 lbs., from Mr. Wm. Robert Grayson.

Also, from the Garden of the Society. Asparagus blanched in tubes, and also grown in the common way; Scarlet Brazilian Pine-apple. Flowers of *Lupinus polyphyllus*, *littoralis*, *tomentosus* var., *ornatus*, and *arbuscus*; *Collinsia grandiflora*; *Mimulus moschatus*, *luteus*, *luteus* var. *rivularis*, and *guttatus*; *Papaver nudicaule* var.; *Rosa Banksiæ* *lutea* and *alba*, Drummond's Thornless Rose, Double Scotch Roses var., new Dutch Azaleas, common Red Hawthorn, *Cratægus Oxyacantha rosea superba*; *Æsculus flava*, *Æ. Pavia*, *parviflora*, and *rosea*; *Thermopsis fabacea*, single yellow Scotch Rose, *Pentstemon Scouleri* and *glauca*, *Pæonia officinalis atropurpurea*, *albicans*, *carneascens*, and *rubra*, *P. albiflora tatárca*, *uniflora*, *erythrostroma*, *carneascens*, *pauciflora*, and *tatárca* (semidouble), *P. paradoxæ fimbriata*, *Tellima grandiflora*.

June 1. — Read. Account of a new Cherry, called the Early Purple Guigne; by Mr. R. Thompson. On the cultivation of the Strawberry; by Mr. John Fairbairn, F.H.S. On a Method of forcing Cherry Trees; by Mr. B. Law of Northampton.

Exhibited. Seven sorts of Pelargoniums, from Mr. Russell of Battersea. A beautiful hybrid Cactus, from the Comte de Vandes.

Also, from the Garden of the Society. Early Purple Guigne Cherry, from a standard, and from a west wall; early May Cherry, from a standard, and from a south wall; early Mayduke Cherry, from a standard; Trinidad Pine-apple. Flowers of *Rosa indica superba*, *majior*, *Fraseri*, and *sanguinea*, *R. Champneyana*, and *L'Heritieriana*, *Rose de Lisle*, *Boursault*, *Watts's Climbing China*, and *Drummond's Thornless*, *Double Scotch Roses*, *Garden Roses*, *Double White Rockets*, *Mimulus moschatus*, *Lupinus polyphyllus*, *L. tomentosus* var., *Clarkia pulchella*, *Eschscholtzia californica*, *Papaver nudicaule* var., *P. Rhæas* var. double, *Pentstemon ovatus*, *P. confertus*; *Pæonia albiflora*, *Whitleji*, *P. a. Reevesia*; *Robinia hispida arborea*, *Spiræa Aruncus americanus*, *Chinese Sweetbriar*, *Iris* var., *Valeriana rubra*, *Verbena pulchella*, *Collinsia grandiflora*, *Eriophyllum cæspitosum*, *Mule Pink*.

June 15. — Exhibited. Seedling Azaleas, from the Earl of Caernarvon. *Double Sempervirens Rose*, and *La Tourterelle Rose*, from Mr. James Young, F.H.S. *Caprifolium pubescens*, from R. Barclay, Esq. F.H.S. *Cypripedium spectabile*, from Mr. W. Malcolm, F.H.S. *Cactus speciosissima*, from Mr. Henry Groom, F.H.S. A collection of Pinks, from Mr. T. Hogg of Paddington. A model of a Wheel Water-engine, by Mr. Siebe, the inventor.

Also, from the Garden of the Society. Flowers of *Combrètum purpureum*, *Cotoneaster frigida*, *Quisqualis indica*, *Campánula crenata*; *Pæonia Humei*, *Reevesii*, and *fragrans*; *Pentstemon diffusus*, *ovatus*, and *venustus*; *Lupinus tomentosus* var., and *læpidus*; *Verbena pulchella*; *Papaver Rhæas* (double), and *nudicaule*; *Eschscholtzia californica*, *Clarkia pulchella*, *Brown's Mule Pink*, *Double White Rocket*; *Mimulus luteus*, *luteus rivularis*, *moschatus*, and *guttatus*; *Bulbous Iris*, *Garden Roses*; *Rosa ruga*, *Champneyana*, *indica sanguinea*, *rubra*, *nigra*, and *superba*; *Azalea triumphans*; *Rosa perpétua Lindleyi*, *sinensis major*; *Rubus arcticus*, hybrid *Rose de Bengal*; double *Ayrshire Roses*, viz. *Elegans*, *Countess of Leven*, and *Perthshire*; standard *Roses*, viz. *Ninon de l'Enclos*, *Aréthuse*, *Mademoiselle de Bourdeaux*, *Gracieuse*, *Miaulis*, *Caroline Michel*, *Délicatesse de Bizarre*, *Mordaunt de Launey*, *Reine d'Espagne*, *Duchesse d'Angoulême*, *Duchesse de Montebello*, *Georgienne de Lafay*, *Ranuncule rouge*, *Poniatowski*; *Rosa indica minor*, *semperflorens venusta*, and *indica anemoneflora*. Fruits of *Knight's Early Black Cherry*, the *Elton*, the *Mayduke* (from a standard), *Guigne Grosse Noire*, *Bowyer's Early Heart*; *Keen's seedling Strawberry*, *Grove End Scarlet*, *Duke of Kent's Scarlet*, *Roseberry Scarlet*, *Nairn's Scarlet*, *Red Wood*, *Dudson House Scarlet*, *Scone Scarlet*, and *Hudson's Bay Scarlet*.

June 21. — The sale of the duplicates in the library, and of some drawings, took place this day, at Wheatley and Co.'s rooms, Piccadilly. There were not many books, and they did not fetch much. The drawings were not numerous: among them was a collection of flowers, exquisitely painted by Miss Lee, only daughter of the joint founder, with Mr. Kennedy, of the Hammersmith nursery, and presented to the Society by her brother, the father of the present Messrs. Lee. We cannot but lament that such a collection should have been sold, not only from the respect which we feel for the family of Lee, but because we think this circumstance enough to discourage any one from making similar presents to the Society in future. The rejection of our Magazine (Vol. V. p. 86.) was nothing to it.

July 6. — Read. Account of a new variety of Plum; by T. A. Knight, Esq. F.R.S. &c., President.

Exhibited. George the Fourth Heartsease, and *Salvia cardinalis*, from Mr. Silverlock. New Cos Lettuce, from Mr. H. Silverlock. Seedling Strawberries, from Jos. Lachlan, Esq. F.H.S. *Cucumis Anguria*, or Snake Cucumber, from Mr. S. Wilson.

Also, from the Garden of the Society. Flowers of *Eschscholtzia californica*; *Oenothera hybrida*, *Lindleyana*, *odorata* new var., *speciosa*, *Fraseri*, *splendens*, *glauca* var., and *fruticosa*; *Petunia nyctaginiflora*, *Calceolaria arachnoides*, *Gilia capitata*, *Valeriana rubra*, *Pentstemon digitalis* and *pulchellus*, *Clarkia pulchella*, *Papaver nudicaule* and *Rhæas*, *Verbena Melandres* and *pulchella*, *Sweetwilliams*, *Silene compacta*, *Clématis florida* (double), *Jasminum revolutum*, *Caprifolium sempervirens*, *Periploca græca*, *Hosackia bicolor*, *Sida malvaeflora*; *Rosa Champneyana*, *semperflorens pallavicina*, and *moschata nivea*; Belle Aurore Rose, Ninon de l'Enclos standard Rose, Octavie cœrelle, Aréthuse, Duc d'Angoulême, Miaulis, Rouge Admirable, Caroline Michel, Charles Auguste, Bizarre de la Chine, Lucelle Dubours, Belle Hélène, Proserpine, Délicatesse Bizarre, Parny, Hybrid du Luxembourg, Belle Thérèse, *Rosa bifera grandiflora*, Duc d'Orléans, Georgienne Lafay, Duchesse de Montebello, Ombre d'Autreuil, Poniatowski. Fruit of Peaches; Downton Cherry; Gooseberries, the Green Walnut, Small Green, Pigeon's Egg, Rough Red, Early Sulphur, Yellow Champagne, Early Royal George, Monck's Charles Fox, Woodward's Whitesmith, Capper's Bonny Lass, Andrew's Nelson's Wavers, and Barnfort's Golden Purse; Strawberries, the Downton, Old Pine or Carolina, Grove End Scarlet, Black Roseberry, Elton Seedling, Southborough; Raspberries, the Barnet, Bromley Hill, Spring Grove, and Woodward's Red Globe.

July 7. — The sale of certain plants took place this day, at the Chiswick garden. The plants were chiefly stove shrubs, camellias, pine-apples, pines, and araucarias. The pine-apple plants went off at good prices, to private individuals; the *Pini Douglasii*, of which there were 102 plants, were purchased by Messrs. Malcolm, Knight, Tate, and Loddiges; the *P. ponderosæ*, 230 plants, by Knight, Malcolm, Lee, Whitley, Tate, and Van Eden; the *Araucariæ imbricatæ*, 100 plants, by Knight, Henderson, Ronalds, Tate, Lee, Colville, Brown of Slough, Loddiges, Malcolm, and Van Eden. We give the names of the purchasers, that amateurs may know where to apply for plants. These pines, the camellias, and the stove plants, brought fair prices; and upwards of 300*l.* were thus obtained.

July 15. — The garden looks fresh and beautiful, in consequence of the late rains and the present heat. It is in better order than it was last year at this time, though there are not nearly so many men; because, then, the head gardener had no heart to do any thing. The air, in some places, is scented with *Mimulus moschatus*, a plant as hardy and of as rapid growth as chickweed; and invaluable for shady situations, or wherever a musky fragrance is desirable. *Lathyrus californicus*, a perennial with pods almost as large as those of the common grey pea, and with leaves and haulm altogether resembling it, deserves a trial from amateur agriculturists. It is, doubtless, hardy enough for the coldest parts of Scotland, and would thrive well in Ireland. It appears to seed freely. We may notice, as a circumstance promising important results, that three plants of the bamboo, imported from India, and planted in a bog in the arboretum, have stood out four winters. It is true they have not grown much, but that may be owing to their not yet being sufficiently established: a bamboo, when it does grow, throws out shoots of many feet or yards in length, in the course of a few weeks, and then stops. To do this, it must first be firmly established at the roots. Our correspondent Causidicus (p. 227.) must be gratified at this circumstance. The Citron des Carmes pear and the early white Crofton apple are just about ripe. The process of naming all the plants, fruit trees, and culinary vegetables, is going on rapidly. The tallies are of cast-iron, about 13 in.

long, with an oval head 4 in. by 2½ in. ; the plate of metal is of **one** uniform thickness of one fourth of an inch, with a small rib on the **back** of the stem to strengthen it. The tallies are thus very light and strong. They are delivered in London, by the Carron Company, at the **rate** of 21*l.* 2*s.* 3*d.* per ton, which contains about 2000 tallies. This is **something** more than 2½*d.* each, and the painting and lettering cost 3*d.* each. It is incomparably more agreeable to walk about the garden **alone**, and learn the names of every thing from these labels, than have **them** told by an attendant; who, even if he pronounces them properly, can seldom impress them on a stranger's memory. The truth is, **that** all scientific names, like the words of a foreign language, to be **understood** and remembered, must be seen.

We wish we could see a **beginning** made to the alteration of this garden, according to our plan, **or to any** other equally good : it would then be our duty, as it would be our pleasure, to support the Society by every means in our power, **short** of that indiscriminate approbation which, we trust, we shall never **so far** forget ourselves as to bestow upon any body of men. If it be **alleged** **that** there is not money enough to commence operations, that is not a **sufficient** excuse for neglecting to enquire whether they ought to be commenced **if** there were money ; and, if our plan or any other is approved of, **to state** that it would be carried into execution, say at the rate of an eighth, **a sixth**, or a fourth part in a year, till completed. If this were done, and **the** public saw any thing like earnestness in reformation and improvement, we have not a doubt that abundance of money would be forthcoming. We wish Mr. Bentham and Mr. Lindley were as much attached to landscape-gardening as they are to botany ; we should then have no fear for the result. In the mean time, we shall **keep** the subject before our readers, and continue to hope. — *Cond.*

ART. VIII. *The London Nurseries.*

FULHAM Nursery, June 27. — The bloom of roses here, as at Mr. Lee's, is remarkably fine ; *Vésta*, a brilliant scarlet, is decidedly the most conspicuous. In the cold-pits we observed a large stock of good plants of *Acacia Julibrissin*, *Chimonanthus fragrans*, and some other shrubs from the south of France ; and we hope this description of intercourse between French and English nurserymen will increase. We noticed also, what we do not recollect to have seen in any nursery before, plants of *Ziziphus vulgaris*, received from Genoa. This shrub is frequent as a hedge plant in the north of Italy, and its dried fruit is as common at the dessert at Milan and Genoa, as almonds or filberts are in London. The jujube has never been fairly tried in this country as a hardy fruit tree : it attains the size of the common hawthorn ; the fruit is oval, about the size of an olive, red when ripe, with an oval stone within, and is of an agreeable sweetness, fresh, or dried like raisins. The jujube is generally kept in a frame, but we have little doubt that it would succeed in a warm dry situation against a wall, at least as well as the Japan quince, pomegranate, and olive trees ; these also ought to be much more common in our gardens than they are.

Mr. Knight, of the Exotic Nursery, King's Road, has become the purchaser, at, it is said, 1500*l.*, of the seeds and plants brought home from Australia by Mr. Robert Baxter. The curious in botany and exotic culture, both in this country and on the Continent, will look with anxious expectation for the new productions contained in this collection. Mr. Baxter informed us that he had added sixty species to the natural order *Proteaceæ*. — *Cond.*

Epsom Nursery. — New or rare plants which have flowered from Feb. to June: —

Class I. DICOTYLEDONEÆ.

Subclass 1. THALAMIFLOREÆ.

Ord. *Ranunculaceæ*. — Trib. 2. *Anemoneæ*. *Anemone* (*Dec.*) *Pulsatilla*. — *Nuttalliana* *Dec.* A hardy perennial, flowering in March. Flowers pale purple: prefers peat; division. — Trib. 3. *Ranunculeæ*. *Ranunculus* (*C. Bauh.*) *cortusæfolius* *Willd.* A native of the Island of Teneriffe, found growing in the fissures of rocks: here it is a frame perennial. Its ample, cordately reniform, lobed leaves, and beautiful yellow flowers, render this a very ornamental species. Flowers from April to June. Division. — *Picaria* (*Dill.*) *ranunculina* var. 2. *pallida*. Remarkable for its pale yellow flowers, which, after being expanded for a few days, become almost white. — Trib. 4. *Helleboreæ*. *Aquilegia* (*Tourn.*) *glandulosa* *Fisch.* Sweet's B. F. G. n. s. t. 55. This beautiful species has passed invariably, in the gardens, as *A. alpina*: but that is a very different plant, the petals of which are blue; whereas, on the contrary, the species in question has cream-coloured petals, blue at the base only. Both species, with *A. sibirica*, are extremely beautiful, meriting a place in every collection. They grow with the greatest luxuriance in peat; seeds.

Dilleniaceæ. Trib. 2. *Dilleneæ*. *Candollea* (*Labil.*) *cuneiformis* *Labil.* B. M. t. 2711.

Berberideæ. *Berberis* (*L.*) *fasciculata* *Sims*, B. M. t. 2396. *Aquifolium* *Parsh.*, *repens* *Lindl.* Bot. Reg. t. 1176., *glumaceum* *Spreng.* The species of *Berberis* here adverted to are remarkable for their evergreen pinnated foliage, and subfascicled racemes of elegant yellow flowers: flowering in March and April. Here they flower magnificently, and are perfecting seeds. They are quite hardy, delighting in peat earth, and propagated by layers; cuttings, also, root without difficulty. *B. glumacea* has the handsomest foliage, and *B. fasciculata* the finest flowers.

Papaveraceæ. *Hunnemannia* (*Sweet*) *fumariæfolia* *Sweet.* B. F. G. t. 276. Seeds of this rare plant were presented to Messrs. Young by Lady Mary Hussey, who had obtained them from Mexico: to this lady they are also indebted for numerous other novelties, which will be elsewhere noticed. This is a beautiful summer-flowering plant, well chosen to bear the name of the distinguished Hunnemann; and almost a fac-simile of the no less beautiful *Eschscholtzia*, but deprived of the orange-coloured base to the petals. Planted in the open border in May, it becomes a shrub with an erect stem, 3 ft. to 4 ft. high, much branched. The leaves are decomposed, generally triternate, glaucous, with linear leaflets. The flowers are solitary, on long peduncles; large, of a golden-yellow colour; highly fragrant; succeeded by a long, silique-like capsule, containing numerous seeds. Protection of a green-house; has not been propagated by cuttings.

Fumariaceæ. *Corydalis* (*Dec.*) *bracteata* *Pers.* A hardy perennial, not exceeding 3 in. in height, with elegant sulphur-yellow flowers in March.

Cruciferae. Trib. 2. *Alyssineæ*. *Draba* (*Dec.*) *cuspidata* *Bieb.* — Trib. 3. *Thlaspidææ*. *Hutchinsia* (*R. Br.*) *alpina* *R. Br.* — Trib. 9. *Lepidineæ*. *Æthionema* (*R. Br.*) *coridifolium* *Dec.* A suffruticose plant, with pro-tumbent branches; clothed with linear subglaucous leaves, and terminated with corymbs of elegant rosy purple flowers. Flowers from May to October. Cuttings and seeds; frame.

Cistineæ. *Heliánthemum* (*Dec.*) *procumbens* *Dun.* Sweet's *Cistineæ*, t. 68.

Violariææ. *Viola* (*Tourn.*) *primulifolia* *L.* An interesting species, with white flowers; the lower petals being elegantly striped with purple. Requires a shady situation in peat.

Caryophyllææ. Trib. 1. *Sileneæ*. *Drypis* (*L.*) *spinosa* *L.*

Geraniaceæ. *Pelargonium* (*L'Herit.*) *Alexanderianum* Penny in Hort.

Eps. ed. 2. ined. Named in compliment to a meritorious gardening lad who has accompanied Sir James Carmichael Smyth (the governor) to the Bahama Islands; and from whose industry, and love of plants, important results are expected. A beautiful free-flowering hybrid, probably the production of some of the varieties of *P. spectabile*. — *P. Hislopiànum* Penny in Hort. Eps. ed. 2. ined. (Young's William the Fourth of the gardens.) From *P. exornatum*, or its allies, several beautiful productions have appeared. Among them, none can vie with the present plant. The upper petals are of the richest dark-velvety colour, surpassing, by many shades, *P. Yeatmanianum*; deprived, however, of the spots on the lower petals, which are peculiar to that hybrid. It is also of free growth. It is intended as a mark of distinction for your correspondent (Vol. VI. p. 48.), whose skill as a gardener and cultivator entitles him to be thus distinguished.

Subclass 2. CALYCIFLO'RÆ.

Leguminosæ. Subord. 1. *Papilionacæ*. Trib. 1. *Sophorææ*. *Thermopsis* (*R. Br.*) *fabacea* Dec. Bot. Reg. t. 1272. — Trib. 2. *Loteæ*. *Cytisus* (*Dec.*) *multiflorus* Lindl. Bot. Reg. t. 1191. A desirable, low-branching, hardy shrub, with yellow flowers in May. It seeds freely. — Subtrib. 3. *Clitoria*. *Indigofera* (*L.*) *sylvatica* Sieb. Hook. Bot. Mag. t. 3000. A green-house shrub, of unrivalled beauty among the numerous species of this genus. A native of New Holland, whence seeds were obtained by Messrs. Young in 1827. The flowers are of a bright rosy purple. Seeds freely; it is also propagated by cuttings. — Trib. 5. *Phaseoleæ*. *Lupinus* (*Tourn.*) *polyphyllus* Lindl. *álbus*, *leucophyllus* Doug. B. R. t. 1124. The rarest of Mr. Douglas's lupines; now in the gardens, where it is thriving in great luxuriance, and is perfecting seeds; *L. áridus* Doug. B. R. 1242. It appears to suffer in a soil saturated with moisture; but, in a dry situation, it is the most lovely species of the genus known to me.

Rosacæ. Trib. 3. *Spiracææ*. *Spiræa* (*L.*) *glaucescens* Sweet. MSS. *ariæfolia* Smith. — Trib. 5. *Dryadææ*. *Sieversia* (*Willd.*) *Péckii*.

Crassulacæ. Trib. 1. *Crassuleæ*. *Rhodiola* (*L.*) *asiatica* D. Don.

Umbelliferæ. *Hackquétia* (*Neck.*) *Epipáctis* Penny in Hort. Eps. ed. 2. ined.

Saxifrageæ. *Antiphylla* (*Haw.*) *retusa* Haw. Sweet's B. F. G. n. s. t. 49. — *Drummondia* (*Dec.*) *Mitella* Penny, Hort. Eps. ed. 2. ined. — *Téllima* (*R. Br.*) *grandiflora* Doug. B. R. t. 1178.

Compositæ. Subord. 6. *Anthemideæ*. Trib. 12. *Chrysanthemæ*. *Tanacetum* (*L.*) *myriophyllum* Willd. — Subord. 7. *Arctotideæ*. *Gaillardia* (*Foug.*) *aristata* Pursh, B. R. t. 1186. A grand flowering herbaceous plant, recently introduced by Mr. D. Douglas and others; which, independently of its greater stature, is a far different plant from *G. bicolor*. Nothing can exceed the beauty of some plants flowering here, in peat soil, upwards of 4 ft. high. A third species of this genus has been presented to Messrs. Young, by Mr. M'Nab, from Dr. Richardson's seeds, under the name of *G. bicolor* var., which has been named *G. Richardsoni* Penny in Hort. Eps. ed. 2. ined., about the size of *G. bicolor*, but more beautiful. All the species seed freely. — Subord. 18. *Astérieæ*. *Nèja* (*D. Don*) *gracilis* D. Don, — Subord. 19. *Senecionis*. *Cineraria* (*L.*) *láctea* Willd., *Tussiláginis* Herit.

Gesneriææ. *Sinningia* (*Nees*) *Hellèri* Nees. This is a fine species, nearly of the size of *S. villòsa*, and widely different from *S. Hellèri* of the *Bot. Reg.*, which has been named *S. Lindleyana* Penny in Hort. Eps. ed. 2. ined., *S. Hellèri* Lindl. B. R. t. 997. but not of Nees. — *S. villòsum* Lindl. B. Reg. t. 1134. All the species are propagated slowly by cuttings. They succeed well, planted in a warm border, in the open air, during the summer months.

Ericææ. Sect. 3. *Rhodoracææ*. *Rhododéndron* (*D. Don*) *sinense* Sweet, B. F. G. t. 290. An important addition to the lists of hardy shrubs, having

stood the preceding winter unprotected. There are several varieties of it now in cultivation, one of which will hereafter be probably ranked a species.

Subclass 3. COROLLIFLO'RÆ.

Polemoniaceæ. *Polemonium* (L.) piliferum *Bot. Reg.* t. 1303., villòsum *Geórgi*, Sweet's B. F. G. t. 266., pulchérimum *Hooker*, B. M. t. 2979., hùmile *Willd.* B. Reg. t. 1304.

Solaneæ. *Salpiglóssis* (*Ruiz et Pavon*) *Barclaiàna*. Intermediate between *S. straminea* and *S. atropurpurea*; but inferior in beauty to either of its parents.

Scrophularinæ. Sect. 2. *Stamina* (2) *Antherifera*. *Calceolaria* L. Flowers of a hybrid *Calceolaria* have been furnished to me by Mr. T. Gellan (by whom it has been raised), intermediate between *C. corymbosa* and *C. purpurea*; and as it is, I believe, the first hybrid of the genus, it may be named *Calceolaria* (L.) *Gellaniàna*. [Some hybrids have been raised in Scotland, an account of which will be found in p. 493.] A second hybrid has been raised in this nursery, intermediate between *C. arachnóidea* and *C. corymbosa*, but has not yet flowered. I propose to name it *Calceolaria* (L.) *Yóungii*. I have, for the sake of euphony, merely named this hybrid after these excellent cultivators. Had it been otherwise, I should have been disposed to give it a complimentary termination [*Youngiàna*].

Labiataæ. *Prunella* (L.) *Browniàna* Penny in Hort. Eps. ed. 2. ined. A native of New Holland, considered the same as *P. vulgaris* by Mr. Brown; but a comparison of the two species, in a state of cultivation, has decided them to be truly distinct. An ornamental species for rockwork; frame. — *Marrubium* (L.) *astracanicum* *Jacq.*

Acanthaceæ. *Ruellia* (L.) *Sabiniàna* Wallich, Bot. Reg. t. 1238.

Primulaceæ. *Dodecatheon* (L.) *Meádia* var. 2. *màior*. A beautiful seedling variety of *D. Meádia*. — *Soldanella* (L.) *crenata* Penny in Hort. Eps. ed. 2. ined. A fifth, and, as far as can be determined, an unrecorded species of the genus, approximating in size and flowers to *S. alpina*, but distinguished from it and the other species by its decidedly crenate leaves. — *S. mínima* *Hoppe*, Sweet's B. F. G. t. 53. — *Primula* (L.) *mistassinica* *Mich.* B. M. t. 2973. Certainly a distinct species from *P. pusilla* *Goldie*. — *Lubinia atropurpurea* B. F. G. This beautiful plant has stood the severity of the last winter unprotected; and has now about twenty flowering stems, which make a fine appearance. — *Anagallis* (L.) *Webbiàna* Penny. This species has also stood uninjured, and is now flowering beautifully.

Polygonaceæ. *Rhèum australe* *D. Don*, B. F. G. t. 269.

Passifloreæ. *Passiflora* (L.) *ligularis* *Juss.* B. M. t. 2967.

Class II. MONOCOTYLEDONEÆ.

Orchideæ. *O'phrys* (L.) *apífera* *Huds.* β *albosépala*. — Trib. 8. *Cypripèdeæ*. *Cypripedium* (L.) *ventricòsum* *Swartz*, B. F. G., new s. t. 1. The imaginary difficulty attending the cultivation of this interesting family of plants, has retarded their being more generally cultivated. Here they may be seen in their native luxuriance, displaying their diversified and peculiar form; oftentimes preeminently beautiful: graduating from the humble musk (*Orchis* (*Herminium monórchis*) of Britain to the splendid subject of the present article, a native of Siberia. For the cretaceous species, a chalky bank, and a bed composed of *Sphágnum*, decayed leaves, and turfy peat, overhung by the microscopical *Filices*, are the only requisites to cultivate all the hardy species of the order with perfect success. The flowers of the species under consideration are of a beautiful reddish purple, continuing in beauty for several weeks.

Irideæ. *Iris* (*Theophrastus*) *flavescens* *Redouté*, B. F. G. t. 56., *vérna* *Mich.* B. F. G. t. 68. — *Sisyrinchium* (L.) *odoratíssimum* *Lindl.* — *Renéálmia* (R. Br.) *paniculata* *R. Br.* — *Cròcus* (L.) *lácteus* *Sabine*, 2. *penicillatus*.

Amaryllidaceæ. *Imatophyllum* (Hook.) Aitoni Hook. Bot. Mag. t. 2856.—
Narcissus (L.) *lobularis* Haw., *semipartitus* Haw., *orientalis* L., *poeticus* L.,
recurvus Haw. — *Leucorum* (L.) *verum* L. v. 2. *multiplex*.

Asphodelaceæ. *Muscari* (Desf.) *pallens* Bess. B. F. G. t. 259.

Gillieraceæ. *Gilliesia* (Lindl.) *graminea* Lindl. Bot. Reg. t. 992. A rare
bulbous plant, typical of a new order, which Mr. Lindley has dedicated to
Dr. Gillies. Grows well in loam and peat, in a cold frame. At Vol. II.
p. 205. it is called a stove plant.

Tulipaceæ. *Fritillaria* (L.) *melagris* L. 2. *multiplex*.

Restiaceæ. *Eriocaulon* (L.) *septangulare* Willd. A difficult plant to
cultivate; but it has succeeded three successive years, in pots filled with
Sphagnum and bog earth, and has now flowered strongly.

Filices. *Asplenium* (L.) *maderense*. — *Alpha*. July 3. 1830.

ART. IX. Covent Garden Market.

The Cabbage Tribe		From	To	Pot and Sweet Herbs.		From	To
		£ s. d.	£ s. d.			£ s. d.	£ s. d.
Cabbages, per dozen:				Tarragon, per doz. bunches		0 3 0	0 5 0
White		0 0 9	0 1 3	Parslain, per punnet		0 1 0	0 1 3
Plants, or Coleworts		0 1 0	0 1 6	Fennel, per dozen bunches		0 3 0	0 0 0
Cauliflowers, per dozen		0 1 0	0 3 6	Thyme, per dozen bunches		0 5 0	0 0 0
Broccoli, Cape, per bunch		0 1 0	0 1 6	Sage, per dozen bunches		0 2 6	0 0 0
<i>Legumina.</i>				Mint, per dozen bunches		0 2 0	0 0 0
Peas { per half sieve		0 1 0	0 1 6	Peppermint, per doz. bunch.		0 1 6	0 0 0
{ per sieve		0 2 0	0 3 6	Marjoram, per doz. bunches		0 4 0	0 0 0
{ per sack		0 6 0	0 15 0	Savory, per dozen bunches		0 2 0	0 0 0
Beans, per half sieve		0 0 9	0 1 0	Basil, per dozen bunches		0 8 0	0 0 0
Windoor { per ½ sieve		0 1 0	0 1 3	Rosemary, per doz. bunches		0 8 0	0 0 0
{ per sack		0 7 0	0 9 0	Lavender, per doz. bunches		0 3 6	0 0 0
Kidneybeans (forced), per				Tansy, per dozen bunches		0 2 0	0 0 0
hundred		0 1 0	0 6 0	<i>Stalks and Fruits for Tarts,</i>			
<i>Tubers and Roots.</i>				<i>Pickling, &c.</i>			
Potatoes { per ton		4 0 0	5 0 0	Capsicums, Chilis, per hun.		0 3 0	0 0 0
{ per cwt.		0 4 0	0 5 0	<i>Edible Fungi and Fect.</i>			
{ per bush.		0 2 0	0 2 6	Mushrooms, per pottle		0 1 6	0 0 0
New, per pound		0 0 0½	0 0 3	Dried Morels, per pound		0 14 0	0 0 0
Jerusalem Artichokes, per				Dried Truffles, per pound:			
dozen, frame		0 0 6	0 0 9	English		0 14 0	0 0 0
Turnips, White, per bunch		0 0 2	0 0 3	Foreign		0 18 0	0 0 0
Carrots, per bunch:				<i>Fruits.</i>			
Young		0 1 0	0 1 3	Apples, Dessert, per ½ sieve:			
Horn		0 0 9	0 1 0	Juneating		0 4 0	0 0 0
Red Beet, per dozen		0 0 0	0 1 6	Hawthornden		0 3 0	0 0 0
Horseradish, per bundle		0 2 6	0 4 0	Sack and Sugar		0 4 0	0 0 0
Radishes:				Baking, per bushel		0 8 0	0 0 0
Red, per dozen hands (24				Pears, Dessert, per half sieve			
to 30 each)		0 0 6	0 1 0	Green Chisel		0 2 0	0 2 6
White Turnip, per bunch		0 1 0	0 1 3	Early Musk		0 3 0	0 0 0
<i>The Spinach Tribe.</i>				Peaches, per dozen		0 10 0	2 2 0
Spinach per half sieve		0 0 6	0 0 9	Nectarines, per dozen		0 12 0	2 2 0
<i>The Onion Tribe.</i>				Apricots, per dozen		0 3 0	0 5 0
Onions, green (Ciboules),				Almonds, per peck		0 8 0	0 0 0
per bunch		0 0 4	0 0 9	Plums, Dessert, per punnet		0 2 6	0 3 6
Garlic, green, per pound		0 1 0	0 0 0	Green Gages,		0 3 6	0 4 0
Shallots, green, per bunch		0 0 8	0 0 9	Cherries, per pound		0 0 3	0 0 0
<i>Asparagus Plants,</i>				Bigarreaus		0 1 0	0 5 0
<i>Salads, &c.</i>				Circassians		0 5 0	0 8 0
Asparagus, per hundred		0 2 0	0 4 0	Currants, Black, per ½ sieve		0 2 6	0 5 0
Artichokes, per dozen		0 4 0	0 6 0	Pine-apples, per pound		0 8 0	0 18 0
Lettuce, per score.				Hot-house Grapes, p. pound		0 5 0	0 18 0
Cos		0 0 9	0 1 3	Melons, per pound		0 1 6	0 3 6
Cabbage		0 0 6	0 1 0	Dutch		0 1 0	0 1 6
Celery, per bundle (12 to 15)		0 1 6	0 2 6	Cucumbers, frame, per brace		0 0 6	0 1 6
Small Salads per punnet		0 0 2	0 0 3	Oranges { per dozen		0 0 9	0 2 6
Watercress, per dozen small				{ per hundred		0 3 6	0 18 0
bunches		0 0 0	0 0 6	Lemons { per dozen		0 0 9	0 2 0
Burnet, per bunch		0 0 3	0 0 0	{ per hundred		0 8 0	0 14 0
				Sweet Almonds, per pound		0 3 0	0 0 0
				Brazil Nuts, per bushel		0 12 0	0 16 0
				Garden Snails, per quart		0 0 6	0 0 0

Observations. — The prices stated in the list are those of the preceding fortnight; the differences during June have been too considerable to admit of being determined with any degree of accuracy; occasionally affected for a day by the excessive wet preventing a supply, and again fluctuating from the opposite cause. — *July 10. 1830.*

July 14. Since my last report, the season has been unfavourable for ripening the various fruits that have, nevertheless, come to hand. Strawberries have been of bad quality and flavour generally. The crop has not been so large as was expected, in consequence of frosts prevailing during the time of flowering; many were also rotted and destroyed by slugs as they ripened: the earliest varieties brought to market this season were, the Old Scarlet and Keen's Seedling, both of which were brought from the open ground on the 22d of May. Gooseberries have been brought in great abundance, the crop being very generally good: the large Lancashire varieties, owing to the prevalence of moisture throughout the month of June, are now very large and fine, but deficient in flavour. Currants are in fair supply, but not so plentiful as last season; the bunches are much injured by the frosts so prevalent in April: the berries are, nevertheless, large and fine, owing to the same causes mentioned regarding the gooseberries. Pears are, in general, a good crop, but have not yet been brought to market in any quantity. Apples are partial, particularly in the London districts, where the earlier varieties are generally obtained; the crop farther off is better, but not equal to a third of last season. Plums are much better in all their varieties, which will make up for the deficiency of supply in early table-apples, and keep our market tolerably well furnished throughout the months of August and September; after which, apples and pears will be sent from greater distances, as by that time they will better bear the carriage; and fair prices will, doubtless, afford the growers a remuneration for their expenses, which was not the case last year, when the greater proportion of common apples were converted into cider, in consequence of the very low prices barely covering cost of carriage and incidental charges. The crop of wall-fruit, such as peaches, nectarines, apricots, and grapes, is tolerably good; but, from the great want of solar heat, is very backward, and will require a long continuance of the present fine weather to bring it to perfection. For the table, melons have been produced earlier this season than might have been expected from its backwardness. Pine-apples have been furnished in good supply and quality; but, owing to the putting off of many public dinner-parties during the time of the late king's illness, have not been in demand. Grapes have latterly been plentiful and reasonable. In general, the supply of fruits may be considered quite equal to the demand, its consumption being materially diminished by the total absence of sun and warmth during the whole of the last, and the early part of the present month. Early peas have not been so plentiful as usual, in consequence of the prevalence of wet, which, although it increases the luxuriance of the haulm, lessens its fruitfulness; in many cases, the pods have rotted before being gathered, and in no case have the peas yielded the usual quantities. The later varieties are now in good supply, but have been subjected to the same deterioration as the earlier: the incoming crops are expected to be much improved by the present favourable appearance in the weather. Windsor and other table-beans are not so abundant as usual, the late wet season having materially affected them during the time of blossoming: the pods are to be found on the top of the stems, where the blossom is necessarily more exposed to the action of the atmosphere. Cauliflowers, although later than usual, have been abundant, and the prices, consequently, low for a short period; but they are gradually getting higher, a difference in value, from 9d. to 3s. per dozen, having actually taken place between the 24th of June and 21st of July. Potatoes have become very plentiful and cheap, being very much increased *in bulk* by the continued rains throughout June: the quality indifferent.

Our winter supplies will be necessarily abundant, and of excellent quality, should fine weather prevail during the ensuing autumnal months. — *G. C.*

The New Market-Building, referred to in our last (p. 379.), is now nearly completed, and we have a general plan, elevation of the east front, and perspective view, in the hands of the engraver, for our next Number. The two conservatories are occupied, the one by Messrs. Cormack, Son, and Sinclair, and the other by Messrs Hockley and Bunney. They are well stocked with showy green-house plants, as is the terrace with hardy flowers, and shrubs in pots. The whole forms a delightful promenade, open to every body; and if the plants were conspicuously named with small lead labels, as in the stoves of the Horticultural Society, this scene would be almost as good as a botanic garden in promoting a taste for plants; for the first step towards the knowledge of things is to know their names. In a small room, also open to every body, Messrs. Cormack, Son, and Sinclair have, or ought to have, like M. Vilmorin and Co. of Paris, a collection of the newest botanical and horticultural publications, a series of models of fruits, a herbarium of the grasses and herbage plants indigenous or cultivated in Britain: they have specimens of the best grass seeds for different specific purposes; plans for laying out flower-gardens, for garden structures, and for laying out residences of every variety of extent, from the street garden upwards; and various new implements, and other matters. Taking it altogether, these conservatories, the terrace, and their accompaniments, surpass any thing which has hitherto been attempted in London; and, as they become known, they will improve, in consequence of artists, artisans, and others sending their productions for exhibition. We should wish to see all Mr. Peake's vases and flower-pots, the terra-cotta statues of Flora, Pomona, Ceres, Venus, Apollo, the busts of naturalists, poets, and philosophers, &c., which we hope he has in hand, as well as the vases and orange tubs of Jones of the Vauxhall Road, and the sundials, pedestals, and therms of these and other ingenious potters.

The architectural beauty of this structure, no less than the very superior accommodation and comfort which it affords to the sellers and also to the purchasers, does the greatest honour to the public spirit of the Duke of Bedford. When we think of Woburn, what it is, and how it is kept up, and of the Duke's public and private character, the absence of all that display of feudal pageantry which in the present day is the never-failing sign of a barbarian or mean understanding, we must take the liberty of saying, even at the risk of giving offence, that we do not know a nobleman of the same rank who has so entirely our approbation. The architect of the market is Mr. Fowler, an artist of exquisite taste in his profession: but the original plan of this gentleman, an engraving of which is now before us, was entirely remodelled, agreeably to the suggestions of Mr. Charlwood, and certainly greatly improved; a circumstance not at all astonishing, considering Mr. Charlwood's great experience as clerk of the market. We shall take this opportunity of observing that, in all cases in which architects are called upon to devise plans out of their common line, they ought to begin by consulting those who are to manage or use the building to be planned, and thus make themselves masters of all the various uses to which the edifice is or may be applied. Were this done generally in the case of horticultural and agricultural buildings in the country, we should be spared the view of many crudities and absurdities. We should have been spared the Chiswick Garden. We shall in due time give an example, in which a gardener, having first made his plan of a plant structure, Mr. Fowler gave it an architectural dress, so as to render it the noblest thing of the kind in the world; perfectly fitted for growing plants, and clothed with the beauty of refined architectural design.

Supposing this vegetable market to be considered as the central one, we should next wish to see other markets arising all round the metropolis, and

more especially a system of *abattoirs*, as in Paris. It is surely disgraceful that such a place as Smithfield, and the scenes to which it gives rise on market days, should be continued in the centre of the most wealthy and populous city in Europe. But nothing on earth is so difficult to move as John Bull; and when he is baited into motion, it is more by the influence of main force, than by the machinery of general system or principle. One person or party takes up the idea of a cemetery, another that of a market; and, after years of perseverance in beating down prejudices and opposing interests, one of the parties becomes fatigued, and the objects are obtained or lost as it may happen. We repeat (see Vol. V. p. 686.) that, for the general improvement of London, and the direction of new streets and public buildings, a commission should be formed, whose proceedings ought to be open, like those of the House of Commons, and their plans or suggestions reported in the newspapers. They would thus be subjected to the test of public criticism, and the salutary influence of enlightened opinion, before being executed. Hitherto, as has been just observed, improvements have gone on at random, or subject to be thwarted by private interest, and the wonder is that things are not much worse than they are. We do not recollect a more vexatious instance of this than the abrupt termination of Regent Street, at St. James's Park, in a flight of steps, instead of the continuation of the carriage road to the front of the Treasury; and all this for the insignificant purpose of gratifying the builders of one or two new houses, at the perpetual inconvenience of the public. Even the steps would not have been permitted, but for a counter individual influence, an order of the king. But what satisfaction is there in that? The one is as much an exertion of individual influence as the other, and it might have happened to be on the wrong side. The political circumstances of a people liable to such outrages on their comforts and convenience, and on the beauty of their metropolis, are bad, and require reformation no less than their streets and market-places. But there is a time for every thing; and it is to be hoped we shall take a hint from France in other things besides *abattoirs* and cemeteries. — *Cond.*

ART. X. *Provincial Horticultural Societies.*

NAME and Address of Secretary not before given : —

Ipswich Horticultural Society, William Woolhard, Honorary Secretary; May 16. 1830.

SUSSEX.

The Chichester Horticultural Society. — This Society held its Spring Meeting on April 15., when prizes were awarded as follows : —

Flowers. Auriculas : 1. Mr. Harrison, jun., gardener to Lord Egremont ; 2. and 3. Mr. Haddon and the Rev. Mr. Watkins, equal. Azaleas : Pink, Mr. Collyer, gardener to E. Woods, Esq., Shopwyke ; white, Mr. Hammond, gardener to Messrs. Humphrey. Camellia *Sasanqua-rubra*, Mr. Groundsell, gardener to J. J. Gruggen, Esq. Cactus *speciosa* and *speciosissima* and Bouquet of Flowers, Mr. Collyer. Box of Flowers, Mr. Sims, gardener to W. Leeves, Esq. Geranium Lord Combermere. Forced Rose, Mr. Collyer. Verbena *Melindres*, and *Erinus lychnidea*, Mr. Hammond. Amaryllideæ, Mr. Goddard, gardener to W. Rhoades, Esq. — *Fruit.* Pears, Mr. Holding. Strawberries : 1. Mr. Collyer ; 2. Mr. Harrison. — *Culinary Vegetables.* Cucumbers : 1. Mr. Collyer ; 2. Mr. Gorsuch, gardener to the Bishop of Chichester, and 3. Mr. Cakebread, gardener to Messrs. Henty, equal ; 4. Mr. Hammond. Mushrooms : 1. Mr. Gorsuch ; 2. Mr. Coates, gardener to the Rev. Geo. Porcher. Sea-kale : 1. Mr. Holding ; 2. Mr. Gorsuch. Rhubarb, Mr. Gorsuch. Potatoes : 1. Mr. Collyer ; 2. and 3. Mr. Cakebread and Mr. Groundsell, equal. French Beans : 1. and 2. Mr. Coates and Mr. Harrison, equal. Lettuce, Mr. Collyer. (*Portsmouth Herald*, April 18.)

ESSEX.

The Chelmsford and Essex Floral and Horticultural Society. — This Society held its First Exhibition this year on April 20., which was respectably and numerously attended.

Flowers. Auriculas : 1. Smith's Waterloo, Birche's Amethyst, and Taylor's Glory, Mr. Charles Harris ; 2. Stretch's Alexander, Butterworth's Lord Hood, and Townshend's Lady Duncan, Mr. Jonathan Harris ; 3. Taylor's Ploughboy, Chilcott's Brilliant, and Taylor's Glory, Mr. G. Wicks. Messrs. Pearson, Bird, and Howard also showed some good specimens. — *Fruit.* Apples : 1. Norfolk Biffin, Ross's Nonpareil, and Royal Nonpareil, John Disney, Esq. ; 2. Ribston Pippin, and Golden Rennet, Mr. Charles Harris.

Mr. Disney also showed some brown beurré pears, sea-kale, lettuce, &c. Mr. Lewis showed two brace of early cucumbers. A collection of early tulips, *Ericæ*, polyanthuses, &c., the growth of Mr. G. Howard, were much admired. (*Suffolk Chronicle*, April 24.)

CAMBRIDGESHIRE

Cambridgeshire Horticultural Society. — This Society held its April Show on April 21., when the following adjudication of prizes took place: —

Flowers. Auriculas (four, one of a sort), Freedom, Netherfield Beauty, Venus, Metropolitan, Mrs. Lascelles. Auricula (of any colour), Revenge, Mrs. Lascelles. Seedling Auricula: no first prize; 2. Mr. Fordham of Hatley. Polyanthus: no first prize; 2. Bonaparte, Mrs. Lascelles. Seedling Polyanthus, Mr. Denson. Double Wallflower: 1. Mr. Lestourgeon; 2. Mr. Widnall. Pinks, Mr. Challis. Double Primroses, Double Crimson, Double White, Double Scotch, Mr. Denson. — **Fruit.** Table Apples, Franklin's Golden Pippin, Mr. Gimson. Strawberries, Keen's Seedling: 1. Mr. Challis; 2. C. Pemberton, Esq. — **Culinary Vegetables.** Cucumbers: 1. Mr. Catling; 2. Mr. Fordham. Potatoes, forced: 1. (10 to the lb.) Ashtop Kidneys, Mr. Fordham; 2. (11 to the lb.) Ashleafed Kidneys, Mr. Challis. Broccoli, White, Col. Pemberton. Cabbage, Mr. Widnall. Rhubarb, Red, Mr. Shippey.

Extra-Prizes. Azalea indica alba, Six Double Hyacinths, and Pears (Colmar and D'Auch), Mr. Biggs. Lettuces, Brown Dutch, Col. Pemberton.

The next Show was announced to take place on the 10th of May, when prizes of 2s. 6d. each will be given to cottagers for double stocks grown in pots, cabbages, and lettuces. It was also stated that the Treasurer renews his bouquet prizes for the four next Shows. (*Suffolk Chronicle*, April 24.)

The May Show of this Society was held on May 19. We do not remember ever witnessing a more splendid display of flowers, particularly geraniums. The green-house plants were superb. The asparagus also deservedly attracted considerable notice. The Chairman (Rev. J. A. Brown) announced the award of the judges as follows: —

Flowers. Tulips (six best bloom, one of a sort), Triomphe Royal, Sir George Duckett, Matilda, Vesta, Ophir, Pizarro, Mr. Searle. Tulip, Catafalque, Mr. Fred. Finch. Anemones (six best, one of a sort), Belle Comtesse, L'Episcopal, Le Sultan Achmet, Sophie, Rose semée des fleurs, La Belle Pallas, Mr. Searle. Anemone, Déesse Flore, Mr. Searle. Heart's-ease (3 best bloom, in pots), Mr. Denson. Pelargoniums (six best bloom, in pots): 1. Anne Boleyn, Moore's Victory, Humei, Staffordianum, Macranthon, Southcotednum, Mr. Widnall; 2. Lord Yarborough, Rosa Matilda, Macranthon, De Vere, Defiance, Anne Boleyn, Mr. Searle. Pelargonium (in a pot), Germanicum, Mr. Widnall. Pæonia (in a pot), Montagne, Mr. Gimson. Stock (grown in a pot), would have been awarded to Joseph Thackeray, Esq. Fellow of King's College, but he was not a member at the time of exhibition. Stock (cut), would have been awarded to Mr. Thackeray, as above, Mr. French. — **Fruit.** Strawberries: no first prize; 2. Mr. French. **Culinary Vegetables.** Peas, John Smith, gardener to Francis Pym, Esq. Lettuces, Mr. Palmer. Asparagus: 1. (50 heads, 8 lb. 8 oz. weight), Mr. Palmer; 2. (nearly the same weight), Mr. Brown of Fordham. Cabbage (4½ lbs), Mr. Widnall. Cauliflowers: no first prize; 2. John Smith, gardener to Mr. Pym. Treasurer's Bouquet, Mr. Gimson.

Cottagers' Prizes. Cabbage and Lettuce, James Tuck, Windmill Cottage.

Extra-Prizes. Carrots, Mr. Hudson. Lettuce, Mr. Widnall. Apples: Table, Seedlings grown from the Old Golden Pippin, Mr. Challis; Kitchen, Hollow-crowned Pippins, Mr. Brown of Fordham. Pelargoniums, Macranthon, Rosa Matilda, Generalissimo, grafted on one stock, Mr. Searle.

The next Show was then announced for the 16th of June, when prizes of 2s. 6d. each will be given to cottagers for the best rose, pink, sweetwilliam, strawberries, potatoes, and peas. It was hinted, for the encouragement of industrious cottagers, that it would be desirable to propose prizes to be given in the autumn (if the cottagers' funds would allow it) for the best hive of bees, and the best cultivated garden in the county. (*Cambridge Chronicle*, May 21.)

The June Show of this Society was held on June 17., when the following adjudication of prizes was announced by the Rev. R. Lascelles, who was in the chair: —

Flowers. Ranunculuses (six best, one of a sort): 1. Henrietta, Charlotte, Charbonnier, Wurtemberg, Chapella, Annette, Mr. F. Finch; 2. Mr. John Bailey. Ranunculus: 1. Le Vrai Noir, Mr. F. Finch; 2. Calchas, Mr. Dickerson. Pinks (six best, one of a sort): 1. Bray's Invincible, Barrett's Conqueror, La Belle Alliance, Harefield Beauty, Filbrooke's Beauty, Davey's Leopold, Mr. Haylock. Pink: 1. Mr. Ripsher; 2. Davey's Roi de Pourpre, Mr. Haylock. Seedling, Mr. Ripsher. Roses (six best), L'Ombre Superbe, Rose de Roi, Princess Victoria, Brown's Sup, George the Fourth, Blush Moss, Mr. Widnall. Rose, George the Fourth, Mr. Crisp. Sweetwilliams, Mr. O'Robin. Seedling Pelargonium: No first prize; 2. Mr. Widnall. Bouquet (Treasurer's), Mr. Gimson. — **Fruit.** Strawberries (size): 1. Keen's Seedling, Mr. Lestourgeon; 2. Keen's Seedling, Mr. Dall. Best lb., containing fewest in number: 1. Keen's Seedling (23 to the lb.), Col. Pemberton; 2. Keen's Seedling (23 to the lb.), Mr. Lestourgeon. Cherries (best plate), May Duke, Col. Pemberton. Melon, Golden Cantaloup, Mr. Dall.

Cottagers' Prizes. — Peas and Potatoes, — Tuck, Harston. Pink and Rose, Edward Dowse, Ickleton. Two Roses, George the Fourth, Unique, Edward Dowse, Ickleton. Sweetwilliam, and Strawberries, — Beales, Cherryinton.

Extra-Prizes. — Cactus speciosissima, Mr. Gimson. Six Seedling Ranunculuses, Mr. J. Bailey. Two Cauliflowers, Mr. Newman, Bourn.

The next Show was announced for the 21st or 28th of July, one of which days will be fixed by the Committee, and of which early notice will be given, when prizes will be given to cottagers for the best carnation, picotee, balsam, hollyhock, gooseberries, currants, and cucumber. Also the Treasurer's prize for the best bouquet.

Thanks were, as usual, voted to the mayor and corporation for the use of the Hall. (*Ibid.* June 18.)

Cambridge Florists' Society — The Ranunculus Show was held on the 14th of June, and notwithstanding the very unfavourable weather for some time past, the Show was decidedly superior to any previous one as to the quality and size of the flowers, the appearance of which on the grand stand was truly beautiful. The tables were neatly decorated with some fine varieties of geraniums from the valuable collection of Mr. Widnall of Grantchester. The following is the award of the judges on this occasion: —

Black: 1. Naxara, Mr. Finch; 2. Naxara, and 3. Grand Bravura, Mr. Bailey; 4. Cell Noir, Mr.

Crisp; 5. Condorcet, Mr. Bailey; 6. Naxara, Mr. Finch. Coffee-colour: 1. Prince George, Mr. Twitchett; 2. Achilles, and 3. Lysandre, Mr. Finch; 4. Orpheus, Mr. Bailey; 5. Theodat, and 6. Majestic, Mr. Dickerson. Dark Purple: 1. Charbonnier, Mr. Finch; 2. Viriatre, Mr. Bailey; 3. and 4. Charbonnier, Mr. Finch; 5. Viriatre, Mr. Bailey; 6. Charbonnier, Mr. Twitchett. Light Purple and Grey: 1. Nomias, and 2. Comble des Richesses, Mr. Finch; 3. Patagonia, and 4. Comble des Richesses, Mr. Twitchett; 5. Nomias, Mr. Dickerson; 6. Noir Foncé, Mr. Finch. Crimson: 1. Ajax, Mr. Bailey; 2. Ajax, and 3. Bienfait, Mr. Finch; 4. Downton's Firebrand, Mr. Bailey; 5. Henriette, Mr. Finch; 6. Ajax, Mr. Bailey. Scarlet: 1. Alphonso, 2. La Beauté Insurmontable, 3. Jupiter, and 4. General Hoche, Mr. Bailey; 5. Charlemagne, Mr. Finch; 6. Downton's Rising Sun, Mr. Dickerson. Rose and Pink: 1. Duchess of Orleans, Mr. Finch; 2. Roscius, 3. Aurora, 4. Adonis, and 5. Duke of Bedford, Mr. Twitchett; 6. Apollo, Mr. Dickerson. Olive: 1. Bouquet Sanspareil, Mr. Finch; 2. Bouquet Sanspareil, Mr. Twitchett; 3. Le Roi Frédéric de Prusse, Mr. Bailey; 4. Horace, Mr. Nutter; 5. Harvey's Olive, Mr. Dickerson; 6. Hardingham's Olive, Mr. Twitchett. Orange: 1. Cedo Nulli, Mr. Twitchett; 2. Prince of Orange, Mr. Finch; 3. Cedo Nulli, and 4. Orange Brabançon, Mr. Dickerson; 5. Orange Beau, Mr. Haylock; 6. Orangière, Mr. Crisp. Yellow and Sulphur: 1. Adrian, 2. Beroth, and 3. Eliza, Mr. Twitchett; 4. Dion, Mr. Finch; 5. Brooks's Yellow, Mr. Bailey; 6. Adrian, Mr. Twitchett. Buff: 1. Cox's Buff, Mr. Finch; 2. Pisistrate, and 3. Couleur de Perle, Mr. Twitchett; 4. Couleur de Perle, Mr. Finch; 5. and 6. Fair Quaker, Mr. Twitchett. White-spotted: 1. Princess of Wales, Mr. Crisp; 2. Andrew, Mr. Finch; 3. Ceres, Mr. Bailey; 4. and 5. Vesta, Mr. Twitchett; 6. Benjamin, Mr. Finch. Yellow-spotted: 1. Princess Galitzin, and 2. Medora, Mr. Twitchett. 3. Andromache, Mr. Bailey; 4. Andromache, Mr. Finch; 5. Newton, Mr. Dickerson; 6. Alfred, Mr. Finch. White-edged: 1. Calchas, Mr. Dickerson; 2. Walworth, Mr. Bailey; 3. Cooper's Curion, and 4. Louissette, Mr. Twitchett; 5. La Tendresse, Mr. Crisp; 6. Nelson, Mr. Dickerson. Yellow-edged: 1. Julius, Mr. Finch; 2. Pucelle, Mr. Dickerson; 3. Pucelle, Mr. Crisp; 4. Prince Galitzin, and 5. Grand Berger, Mr. Finch; 6. Julius, Mr. Bailey. Red and White-striped: 1. Orissa, Mr. Bailey; 2. Téméraire, Mr. Dickerson; 3. La Cour de France, and 4. Téméraire, Mr. Finch; 5. La Cour de France, and 6. Œillet Incomparable, Mr. Crisp. Red and Yellow-striped: 1. Œillet gold-striped, Mr. Twitchett; 2. and 3. Mélange des Beautés, Mr. Finch; 4. and 5. Mardonia, Mr. Crisp; 6. Brook's Scarlet and Gold, Mr. Dickerson. Mottled: 1. Chassellas, Mr. Twitchett; 2. Cassandra, 3. and 4. La Singulaire, and 5. Nixon's Queen, Mr. Bailey; 6. Restoration, Mr. Dickerson. Shaded White. 1. and 2. Annette, 3. Tillot's Blush, and 4. Annette, Mr. Finch; 5. Tillot's Blush, Mr. Nutter; 6. Tillot's Blush, Mr. Stearne. White: 1. La Favorite, Mr. Finch; 2. La Favorite, Mr. Twitchett; 3. Bell's White, Mr. Crisp; 4. La Favorite, and 5. Kermes, Mr. Finch; 6. White Swan, Mr. Crisp. (*Cambridge Chronicle*, June 18.)

SUFFOLK.

Ipswich Horticultural Society. — A Meeting was held on April 20th, when the Judges, Mr. Buchanan and Mr. Garrod, and Mr. Sally as umpire, awarded prizes as follows:—

Plants. Stove or Green-house plant in bloom, in a pot (*Nerium splendens*), Mr. J. Smith. — *Flowers.* Auriculas, Mr. Woollard. — *Fruit.* Table Apples (Nonpareils), and Kitchen, Mr. J. Smith. — *Culinary Vegetables.* Cucumbers: 1. Mr. J. Smith, gardener to Dykes Alexander, Esq.; 2. Mr. William Allen, gardener to Lieut.-Col. Edgar; 3. Mr. R. Marriott, Stowmarket. Forced Potatoes: 1. Mr. Waller; 2. Mr. Burns, gardener to Lord Rivers. French Beans, Mr. J. Smith. Asparagus, Mr. Bird. White Broccoli, Mr. Allen. Brown Broccoli and Cabbages, Mr. Lovely. Lettuces, Mr. Burnes. Rhubarb, Mr. J. Smith. Sea-kale, Mr. Burns.

Cottagers' Prizes. Vegetable of any kind grown by a Cottager (being a labourer), — Quinton, of Westerfield, for the best Cabbages.

William Rodwell, Esq. was unanimously elected President. A handsome medal from the London Horticultural Society was presented, with suitable remarks from the Chairman, to Mr. Robert Milborn, for the general excellence of his productions in the year 1828, and Mr. Milborn returned thanks. — This Society, we are happy to find, is progressing most satisfactorily. Several new members were admitted (there are now more than 200), and the finances of the past year were found to be adequate to the purposes of the Society. We should be glad to see the Cottagers' Prizes more extensively contested: this is a point of infinitely more importance than who is the best grower of pines among the great, some of whom, we know, have ostentatiously exhibited their fruit, and then selfishly ordered its return back to their own homes, instead of leaving it to promote the general enjoyment of the dinner party of subscribers. (*Suffolk Chron.*, April 24.)

[Ostentatious and selfish this practice may well be called. It can only be accounted for from that utter want of sympathy for the lower classes which in this country exists among the higher; the consequence of extreme inequality in the distribution of wealth and knowledge. It is good to record cases of this kind, because they assist in awakening reflection. Every evil must be known and felt, before a remedy can even be wished for.]

NORFOLK.

Norfolk and Norwich Horticultural Society. — This useful and increasing Society held their Second Show of Fruits, Culinary Vegetables, and Flowers on May 26. A great number of specimens were again sent in, and were very tastefully arranged on tables in the centre of the hall; the display of pelargoniums, geraniums, tulips, cactuses, rhododendrons, irises, &c. was truly splendid. In the adjudication made, it is with much pleasure we refer to four prizes given to industrious cottagers, as it affords a proof of the spirit of emulation excited by the establishment of this Society, — a spirit which in its progress must be productive of the best results. Prizes were awarded as follows:—

Flowers. Tulip, The Glory of Norwich, Mr. Wilson. Pelargonium Southcotconum, Rev. J. Custance. Rarest Exotic, Dwarf Fan Palm, Rev. George Leathes. Flower of Chalcidonian Iris, Mr. Robert Ellis. Rose in a Pot, Mr. Noverre. Cactus speciosa, Mrs. Ives. Best Bouquet, Mrs. Mackie. — *Fruit.* Queen Pine, Lord Stafford. Melon, J. Browne, Esq. Strawberries, Keen's Seedling, Mrs. Ives. Table Apples, P. Raven, Esq. — *Culinary Vegetables.* Potatoes, Ashleaved Kidney (grown in natural ground), Mr. Hartt. Cucumbers, Mr. Sapy, gardener to Richard Crawshay, Esq. Florence Cos Lettuces, Mr. Jacob Vince.

Cottagers' Prizes. Orange Russet Apples, John Harmer. Peas, John Harper. Onions and Cabbage, John Poll. Bouquet, Edward Boon.

Lord Stafford sent a brace of queen pines, one Assyrian melon, peas (Bishop's Dwarf), Roseberry and Keen's strawberries, also honey in the comb, with bees at work in a glass. The Rev. George Leathes sent a superb collection of exotics, among which were the Chamærops humilis,

and C. Fisk, Mr. Smith — Gellings, Frederick. Augsburg, Mr. H. Wilmann, Bart. Green
Tins, Early, Frank, J. Taylor, Esq. Putnam, Benjamin's Early, not turned, Mr. Wood. Lat-
tice, Bath Co., J. Taylor, Esq.

Lobelia speciosa, Mr. Hooting; *Nervum canadense*, Mr. A. Lachance; *Bart.* Baham, J. Taylor, Esq.; *Eryth. Gorda*, Mr. Smith; *Aletrisyon vestitus*, Mr. Tapp; *Adiantum patens*, Mr. Fuller.
(Harvard's Worcester Journal, May 31.)

Fair of Eschschol Horticultural Society.—April 22. There was a superb display of cutflowers and herbaceous from Mr Holmes, Mr Hunt, and Mr Davies, as well as of stove and green-house plants. Fine specimens of large asparagus and cucumbers from Mr New, Mr Charles Throckmorton, and Mr Jeany, and thirty-six plates of various sorts of apples were exhibited in the highest state of preservation. Amongst a numerous collection of stove and greenhouse plants, there was a specimen of *Chloris speciosa* engrafted upon *Actaea grandiflora* the former being evidently improved in size thereby; also two plants of *Chrysanthemum*, each containing upwards of sixty blossoms. *Mimulus mexicanus*, *Polemonium mexicanum*, and *Cassia* species, all from the garden of the President, R. Bange, Esq., who presented a sample of wine made entirely from the fruit of the black-heart cherry, that had been one year in the rack, and two years in bottle. It was a most specimen of British wine, and likely to keep well in bottle. The following articles were awarded:—

Flora: Above or Green-house. 1 *Chrys. speciosa*, above sixty blossoms, E. Hodge, Eng.; 1 *Pendulous Fuchsia*, Mr. Jupp; 1 *Chrys. spectabilis*, Mr. Jupp. Hardy: 1 *Crimson Primula*, Mrs. Hunt; 2 *Butcher Primula*, Rev. Mr. Bullingdon. — Flowers: *Auricular Green*, signed; 1 *Pearson's Bluebell*, Mr. Holmes; 1 *Unknown*, Mr. Hunt; 1 *Dawn's Specter*, Mr. Holmes. Grey-eyed: 1 *Kenny's Englester*, Mr. Holmes; 1 *Unknown*, Mr. Mayfield; 1 *Mary Anne*, Mr. Davies. White-eyed: 1 *Primula Eclipse*, and 1 *Unknown*, Mr. Holmes; 1 *Taylor's Glory*, Mr. Mayfield. Self: 1 *Lord Primrose*, and 1 *Fleur's Flag*, Mr. Holmes; 1 *Whisker's True Blue*, Mr. William Murrell. Alpine: 1 *George the Fourth*, and 1 *Unknown*, Mr. Holmes; 1 *Captain Fraser*, Mr. Davies. Polyanthus: Dark: 1 *Pearson's Alexander*, and 1 *Beauty of Ower*, Mrs. Hunt; 1 *Black John*, Mrs. Davies. Red: 1 *Rapid*, and 1 and 1 *Unknown*, Mrs. Hunt. Hyacinth: Red: 1, 2, and 1 *Mrs. Hunt White* 1 and 1 *Mrs. Hunt*; 3 *Mr. Gumbell*. — Fruit: Apple: 1 the Green Mountain, Mr. Harriet; 1 *Sourish* *Magnum*, Mr. Humphreys. — Culinary Vegetables: *Marrows*, Mr. Jupp. *Sea-kale*, Mr. Fulton. *Cucumbers*: 1 the *Charles Thompson*, 1 *Mr. Jupp Broom*, Mr. Hunt. *Asparagus*, Mr. Anthony New. *Cabbage*: 1 *Early York*, Mr. Cheek; 1 not named, Mr. Anthony New. (*Winter's Herald*, Nov. 2.)

HOWMOUTSIDE

The Cheshamshire and Monmouthshire Horticultural Society held its General Meeting in Cardiff on April 18. The productions from the gardens of the neighbouring parishes were both more numerous and more beautiful than at any previous show. The Charles Morgan sent several very beautiful flowers, but those which attracted the most particular attention, and deservedly so, were sent by J. Maybridge, Esq., of Calne. We are happy to see that this Society is preferring much greater attention to the cottage, by inducing them to cultivate their gardens with more attention, and in a better manner, than heretofore. Some of the flowers exhibited by this class of persons would have done credit even to a professional gardener. The following gentlemen were appointed judges of the Show:—J. H. Maybridge, Esq., William Hunt Doughty, Esq., and the Rev. E. W. Richards, for the vegetables, and Messrs. Matthews, Bennett, and Williams, for the flowers, who awarded the prizes, in their respective departments, to the following persons:—

Flowers. *Camellia japonica* 1 Double White, R. Hill, Esq., & 2 Black, J. Maybridge, Esq.
 Most curious Flower 1 *Calceolaria corymbosa*, J. Maybridge, Esq. & 2 *Primula cortusoides*,
 Hon. W. B. Grey. Most beautiful Flower 1 *Paeonia moutanensis*, J. Maybridge, Esq. 1 Double
 Red Camellia, Mr. C. Morgan. *Potamogeton* 1 and 2 J. Maybridge, Esq. Second best 1
 Colonel Morgan, & Rev. J. M. Traherne. Tulip 1 J. Maybridge, Esq. 1st 1 Morgan.
 Most beautiful Tulip, Col. Morgan. *Auricula*, E. P. Richards, Esq. 1st and 2 Rev. J. M.
 Traherne. *Anemone*, Mr. C. Morgan. *Hyacinth* 1 1st 1 Morgan 2 2nd 1 Morgan.
 Double *Primrose*, Col. Morgan. Double *Wallflower* 1 Rev. J. M. Traherne 1 First Prize, Mr.
 C. Morgan. Preserved Filberts, J. Maybridge, Esq. *Securidaca* 1st 1 J. Maybridge, Esq.
 Baking Power, R. Hill, Esq. Best Table Apples 1 J. Maybridge, Esq. 1 1st 1 Morgan. Second
 best Table Apples 1 Mr. Thomas Minnett, & J. Maybridge, Esq. First Baking Apples 1
 Hon. W. B. Grey, & R. F. Jenner, Esq. Second best Baking Apples 1 Rev. J. M. Traherne,
 & R. Hill, Esq. — *Cauliflowers* *Agaricus* 1 Mr. Thomas Minnett, & 1 J. Maybridge.
 Cucumbers 1 Mr. Thomas Minnett, & E. P. Richards, Esq., & 2 Rev. J. M. Traherne. *Pea-*
sons, 1st 1 R. Hill, Esq., & Hon. W. B. Grey. *Kale* 1 J. Maybridge, Esq. & 2
 Mr. C. Morgan. Mushrooms 1 R. F. Jenner, Esq., & J. Maybridge, Esq. Brussels, R. Hill,
 Esq. Cabbages, Mr. Thomas Minnett. Carrots, Rev. J. M. Traherne. Parsnips, J. Maybridge,
 Esq. Celery, Col. Morgan. Lettuce, J. Maybridge, Esq. Spring Onions, Hon. W. B. Grey.
 Radishes, Mr. Thomas Minnett.

Salvo-Peque. An Athenian Papist, raised from a cutting, Mr Thomas Minnett, Newbury. **Anthracum, Miss Shapp.** Several cuts of *Flula araphis*, E. Hall, Esq. **Alnus glutinosa**, and **Alnus Bracteata**, Rev J M Traborn. **Polypus Africanus**, Mr C Morgan. **Arctia pubescens** and a pair of the do, Rev J M Traborn.

Cottagers: From: Basket of Vegetables, David Williams of Duffryn. Table Fowls, Edward Williams, Llanidlof. Wallflower 1 Thomas White, Whitchurch. 1 John Herbert, Cardiff. Best Flower of the year, and second best, two *Polygostachya*, J Lewis, Cardiff. Preserved Filberts, Miss David, Cardiff. Cottagers, John Herbert, Cardiff. (The Standard, May 2.)

TELEPHONE LINE

Herefordshire Horticultural Society.—April 23. In the flower department, perhaps, the only class of auriculas was deficient in a trifling degree, but the abundance and beauty of the alpinas, most of which were seedlings, more than compensated, and it is a pleasing duty to add, that these very choice flowers are the produce of seeds sown by the fair hand of one of the earnest patronesses of this flourishing Society. The polyanthums were good and in full supply, but the *Synanthus* were not so numerous as we have seen them, which has been the case generally throughout the kingdom. The green-house plants were excellent, amongst which the

Achillea millefolium, *Beta esculenta*, *Hedysarum myrtifolia*, *Pulsatilla oppositifolia*, *Cornus canadensis*, *C. pauciflora*, &c., almost unanimously; and in the hardy plant class a novelty presented itself, a Russian globe, about 8 in. high, in full bloom, growing in a pot. The fruit and vegetable stands exhibited a remarkably fine display of art, London, and West potatoes, golden pippins, golden Harveys, margills, Ribston oranges, nonpareils, &c., in better preservation than ever we saw them before in the month of April, as were also the pears. The asparagus was excellent, and likewise the French beans, potatoes, cauliflower, brocoli, cuttings, courgettes, and cucumbers; amongst the latter one a leaf from the garden of J. Bennett, Esq., the finest we have ever seen at this season of the year. The prizes were awarded as follows:—

[illegible]

At the second stage of this Society the prizes were awarded as follows —

[illegible]

Ross Horticultural Society — April 21 The long stage was filled with cactuses, polyanthuses, and hyacinths, and the prize flowers glittered with some very choice specimens in the former class. The desert fruits examined 100 dishes, and we found them in the highest state of preservation, besetting the assistance of an October rather than an April display. The various productions of the kitchen garden and hot bed were in great abundance, and the greater portion of the best quality, particularly the cucumbers. Upon the whole, it was generally admired to be the best spring show assembled. The number of spectators attracted and entered in the Society's books amounted to 615, and the evening's sale produced \$1 45 00. The prizes were awarded as under:—

Plants: *Beech* and *Green-house* 1 *Camellia japonica*, J. Cooke, Esq., 2 *Cereus syndesmonanthus*, Mr C. Jeany, 1 *Amorillia Johnsonii*, Mr J C Wheeler, 4 *Berlinia arruilla*, and 2 *Adiantum crinale*, John Cooke, Esq. Hardy 1 *Parsonsia Moutan* *Shandoo*, John Cooke, Esq., 2 *Asplenium adnigrum*, 3 *Shadobutendron caput-medusae*, 4 *Shadobutendron phytanthum* and 1 *Lobelia latifolium*, Mr J C Wheeler. *House* 1 *E. princeps*, Mrs Wootfaling, 1 *E. hortensia*, 1 *E. orientale*, 4 *E. virginica*, and 1 *E. diandra*, John Cooke, Esq. *Parthen* 1 *E.* and 1 *E.* Mrs Wootfaling, 4 Mr Reynolds, 5 J Cooke, Esq. — *Flowers* *Auricula Green-edge* 1 *Banksia Provencia*, and 2 *Howard's Nelson*, Mrs Wootfaling, 3 *Warren's General Blucher*, J P Willis, Esq., 4 *Banksia's Jolly Tar*, and 1 *Wid's Bridport*, Mrs Wootfaling. *Cory edged* 1 *Rider's Watering*, 2 *Empire's Ringmaster*, and 3 *Walter's Alexander*, Mrs Wootfaling, 4 *Lancashire Hero*, Mr Reynolds, 5 *Clough's De Lisle*, Mrs Wootfaling. *White-edged* 1 *Lea's Venus*, and 2 *Taylor's Olney*, Mrs Wootfaling, 3 *Pitt's Regulator*, Mr Reynolds, 4 *Hughes's Pillar of Beauty*, and 5 *Cox's Pillar of Beauty*, Mrs Wootfaling. *Self* 3 *Red Lord*, and 1 *Whitaker's True Man*, Mrs Wootfaling, 3 *Kenny's Flora's Flag*, Mr J C Wheeler, 4 *Gordon's Strathholder*, Mrs Wootfaling. *Alpine* 1 *Alpine Shepherds*, Mrs Wootfaling, 2 not named, Miss Tronard, 1 not named, Mr J C Wheeler, 4 *Beauty of the Alps*, and 1 *Salomander*, Mrs Wootfaling. *Polypodium* Dark 1 *Seedling*, Mrs Platt, 2 *Seedling*, Mrs Wootfaling, 3 and 4 *Seedling*, Mrs Platt, 1 *Seedling*, Mrs Wootfaling. Red 1 *Seedling*, Mrs Wootfaling, 2 *Seed's Telegraph*, W. Gilman, Esq., 1 *Seedling*, Mrs Wootfaling, 4 *Langton's Doctor*, W. Gilman, Esq., 6 *Seedling*, Mrs Wootfaling. *Hyantha* *Star*, double 1 *Lord Wellington*, Mr J C Wheeler, 2 *Oliver Terrestre*, Mrs Wootfaling, 1 *Majestica*, Mr J D Wheeler, 4 *Marshall de France*, E. Evans, Esq., 1 *La Capucine*, J F Willis, Esq. Red, double 1 *Great Yarn*, Mr J C Wheeler, 2 *L. Haver*, 4 *Amsterdam*, Mr Reynolds, 3 *Hedone Easton*, Mr J D Wheeler, 4 *Rutana*, J F Willis, Esq., 1 *Apothecary*, Mr J C Wheeler. *White*, double 1 *Duke of Bedford* and 2 *Comte de Paris*, J P Willis, Esq., 2 *Anna Maria*, Mr C. Bunker, 4 *Havilland*, and 1 *A la mode*, Mrs Wootfaling. *Monopoly*, Mrs Wootfaling. — *Plant* *Thorn Apple*, 1 *Golden Harvey*, J F Willis, Esq., 2 *Ashtons's Kernel*, John Cooke, Esq., 3 *Masparotti*, Mr. H. Haffert, 4 *Robins Pique*, Mrs Platt, 1 *Brandy*, Mr H. Haffert. — *Cuttings* *Proserpine*, *Donale* 1 W. Matthews, Esq., 2 E. Evans, Esq., 3 *Rep* 1 *Robertson*, 4 Mrs Wootfaling, 4 J Cooke, Esq. *Crown* 1 Mr C. Jeany, 2 Mr Reynolds, 3 and 4 Mr C. Jeany, 5 Mr Reynolds. *Brown* 1 W. Matthews, Esq., 1 *Blue*, Esq., 1 *Col Money*, 6 Mrs Platt, 5 Mr T E. Jones. *Brown or Purple* 1 and 2 *Col Money*, 3 C. Day, Esq., 4 J Cooke, Esq., 5 Mrs Platt. *Cabbages* 1 John Cooke, Esq., 2 H. Compton, Esq., 3 Mr Crump, 4 Mr Reynolds, 5 Mr T E. Jones. (Std., April 18.)

May 19. We have always had great expectations from the Roux Revists, and

we hear they stand unrivalled; we trust they will maintain their high character, being, as it were, the parent or original society from which, in various parts of the kingdom, upwards of 100 societies have established themselves; thus affording to the public an endless and ever-delightful gratification. The tulips, notwithstanding the advanced season and frosts in April, were in great number, and of excellent family, but we found them generally in too much colour, which we heard was the case in most parts of the kingdom. The hint in our article last year, we were glad to find, met with attention, and we can now say the Ross florists can show anemones. The number of specimens ticketed and entered in the books amounted to 810, and the evening's sale of unremoved asparagus and peas to 15s. 10d. The prizes were awarded as under: —

Plants. Stove: 1. *Plumbago chinensis*, Mr. J. D. Wheeler; 2. *Cactus speciosa*, John Cooke, Esq.; 3. *Hoya caribaea*, Mr. J. C. Wheeler; 4. *Salvia splendens*, Rev. T. Underwood; 5. *Rouvafdia*, Mrs. Platt. Green-house: 1. *Calceolaria integrifolia*, John Cooke, Esq.; 2. *Melaleuca splendens*, Mr. J. C. Wheeler; 3. *Elichrysium superbum*, Mr. J. D. Wheeler; 4. *Diosma rubra*, John Cooke, Esq.; 5. *Polygala latifolia*, Mr. J. C. Wheeler. Hardy: 1. *Rhododendron catawbiense*, Mrs. Westfaling; 2. *Kalmia latifolia*, and 3. *Azalea nudiflora floribunda*, Mr. J. C. Wheeler; 4. *Padus Moutan Banksiae*, K. Evans, Esq.; 5. *Dodecatheon Meadia*, Mr. Reynolda. — *Flowers.* Tulips. Feathered Bizarres: 1. Pompey's Femabree, Mrs. Cary Cocks; 2. Cato, and 3. Cardinal, W. Gillman, Esq.; 4. Juno, and 5. Commander-in-Chief, Mrs. Cary Cocks. Flamed Bizarres: 1. Polyphemus, and 2. Goud Beurre, J. F. Willis, Esq.; 3. and 4. (not named), Mr. J. D. Wheeler; 5. Catafalque, Miss Trusted. Feathered Bybloemens: 1. Maitre Partout, Thomas Rudge, Esq.; 2. Washington, Mr. P. Baylis; 3. Abdalonymus, 4. Reine d'Egypte, and 5. Lady Exeter, Mrs. C. Cocks. Flamed Bybloemens: 1. Lechardoneret, 2. Holmes's King, and 3. Le Joy de Davey, T. Rudge, Esq.; 4. Scipio, Mrs. Cary Cocks; 5. Duchess of Wellington, T. Rudge, Esq. — Feathered Rose: 1. Camuse de Croix, 2. Rose Cerise, and 3. Catalina, Mrs. Cary Cocks; 4. (not named), W. Matthews, Esq.; 5. Lucy, Mrs. Cary Cocks. Flamed Rose: 1. Rose Hebe, Mr. P. Baylis; 2. Passage du Danube, and 3. Triomphe Royal, T. Rudge, Esq.; 4. (not named), Mr. J. D. Wheeler; 5. Nicodemus, W. Gillman, Esq. Anemones. Dark: 1. Mr. J. C. Wheeler; 2. Mr. Crump; 3. W. Gillman, Esq.; 4. and 5. Mr. James Rudge. Light: 1. and 2. Mrs. Westfaling; 3. and 4. Mr. Crump; 5. W. Gillman, Esq. Pelargoniums. Dark: 1. Davey's sum, John Cooke, Esq.; 2. Anne Boleyn, Rev. T. Underwood; 3. Lord Yarborough, and 4. Lord Combermere, John Cooke, Esq.; 5. Rubicundum grandiflorum, Mr. J. C. Wheeler. Light: 1. Duchess of St. Alban's, Mr. J. D. Wheeler; 2. Macranthon superbum, Mrs. Platt; 3. Macranthon, 4. Youngii, and 5. Tricolor, John Cooke, Esq. Heaths: 1. *E. vestita coccinea*, and 2. *Ventricosa coccinea*, John Cooke, Esq.; 3. *Ventricosa carnea*, and 4. Tricolor, Mrs. Westfaling; 5. Odorata, Miss Trusted. Nosegay, John Cooke, Esq. — *Culinary Vegetables.* Asparagus: 1. Mr. Holbert; 2. Mrs. Platt; 3. and 4. Col. Money; 5. J. F. Willis, Esq. Green Peas: 1. and 2. Mr. Crump. (*Hereford Journal*, May 26.)

YORKSHIRE

Hull Floral and Horticultural Society. — The First Meeting of this Institution for the season was held on May 3. The judges awarded prizes as follows: —

Flowers. Auriculas: Grimes's Privateer, Mr. George Wharton. Green-edged: 1. Pollitt's Highland Boy, 2. Booth's Freedom, and 3. Moore's Jubilee, Mr. George Wharton; 4. Buckley's Jolly Tar, Mr. Wadsworth, gardener to G. Egginton, Esq.; 5. Pollitt's Highland Boy, Mr. George Wharton; 6. Grimes's Privateer, Mr. R. Deighton. Grey-edged: 1. Grimes's Privateer, and 2. Hey's Lovely Ann, Mr. George Wharton; 3. Warris's Union, Mr. Wadsworth; 4. Grimes's Privateer, and 5. Kenyon's Ringleader, Mr. G. Wharton; 6. Taylor's Ploughboy, Mr. Norman. White-edged: 1. Leigh's Earl Grosvenor, Mr. G. Wharton; 2. Taylor's Incomparable, Mr. R. Deighton; 3. Taylor's Glory, Mr. G. Wharton; 4. Hughes's Pillar of Beauty, Mr. Wadsworth; 5. Hughes's Pillar of Beauty, Mr. G. Wharton; 6. Hughes's Pillar of Beauty, Mr. Wadsworth. Sells: 1. Metropolitan, Mr. G. Wharton; 2. Ned Lud, Mr. R. Deighton; 3. Ned Lud, 4. Flora's Flag, and 5. Ned Lud, Mr. G. Wharton; 6. Ned Lud, Mr. R. Deighton. Alpine: 1. King of the Alps, Mr. G. Wharton; 2. King of the Alps, and 3. Edmondson's Polycarp, Mr. Wadsworth; 4. King of the Alps, Mr. R. Deighton; 5. Queen of the Alps, Mr. Wadsworth; 6. Amos's Fraser, Mr. Norman. Best Seedling, Mr. R. Deighton. Polyanthus. Scarlet: 1. Fletcher's Defiance, Mr. R. Deighton; 2. and 3. Cox's Regent, Mr. Norman; 4. Stead's Telegraph, Mr. Deighton. Dark: 1. and 2. Pearson's Alexander, 3. and 4. Thompson's Revenge, Mr. Wadsworth. Hyacinths. Double: 1. Mr. G. Wharton; 2. Mr. R. Davies; 3. Mr. G. Wharton; 4. Mr. Allinson; 5. and 6. Mr. R. Davies. Single: 1. Mr. R. Davies; 2, 3, and 4. Mr. M. Bell; 5. Mr. G. Wharton; 6. Mr. R. Davies. Bouquet, Mr. D. Brown. — *Fruit.* Apples (eaters, best plate): 1. Mr. R. Robson; 2. Mr. J. Allinson; 3, 4, and 5. Mr. R. Robson; 6. Mr. J. Allinson. Bakers: 1, 2, 3, 4, 5, and 6. Mr. Smithson. — *Culinary Vegetables.* Best plate of Vegetables (Cauliflower Broccoli), Mr. R. Robson. Cucumbers: 1. Mrs. Williamson; 2. Mr. Wadsworth; 3. Mr. Williamson; 4. Mr. Wadsworth; 5. and 6. Mr. Gardham, gardener to J. Shepherd, Esq., Cottingham. (*Hull Advertiser*, May 7.)

May 24. The premium was awarded to J. C. Cankrein, Esq., for the best Feathered Rose Tulip (Count de Vergennes), and the flowers, &c., placed as follows: —

Flowers. Feathered Bybloemens: 1. Incomparable Pell Mell, Mr. Percy; 2. Grand Cid, Mr. Bell; 3. Bienfait, Mr. Allinson; 4. Black Baguet, Mr. Heward; 5. Agamemnon, and 6. Violette Impériale, Mr. Percy; 7. Tour de Salisbury, and 8. Baguet, Mr. Bell. Flamed Bizarres: 1. Duc de Savoie, Mr. Burman; 2. Surpasse Catafalque, Mr. Percy; 3. Lord Hill, Mr. Allinson; 4. and 5. Duke of Devonshire, Mr. Beecroft; 6. Malagrote, Mr. Percy; 7. La Cantique, Mr. Heward; 8. Bell's Kind, Mr. Deighton. Flamed Rose: 1. Cerise Primo, Mr. Deighton; 2. Rose Herodius, Mr. Bell; 3. Rose Herodius, Mr. Beecroft; 4. Countess de Maroc, Mr. Bell; 5. Triomphe Royal, and 6. Cerise Primo, Mr. Deighton; 7. Orion Cerise, Mr. Bell; 8. Triomphe Royal, Mr. Beecroft. Feathered Bybloemens: 1. Maria Anna Louisa, Mr. Percy; 2. Incomparable Ease, 3. Queen of May, and 4. Duchess de Parma, Mr. Bell; 5. Laura, Mr. Wharton; 6. Maitre Partout, Mr. Beecroft; 7. Incomparable Zelinda, and 8. Gay Stella, Mr. Bell. Feathered Bizarres: 1. Goud Beurre, and 2. Duke of York, Mr. Deighton; 3. Grandeur Superbe, Mr. Bell; 4. Hodington's Rainbow, Mr. Deighton; 5. Louis le froid, Mr. Bell; 6. and 7. Trafalgar, Mr. Richard Oglesby; 8. Surpasse Catafalque, Mr. Bell. Feathered Rose: 1. Count de Vergennes, and 2. Do Little, Mr. Cankrein; 3. Glory of Walworth, Mr. Bell; 4. Do Little, Mr. Beecroft; 5. Ponocautres Blane, and 6. Do Little, Mr. Bell; 7. Do Little, Mr. R. Oglesby; 8. Triomphe Royal, Mr. Bell. Best Seedling, Mr. Howard. Pelargoniums. White Ground: 1. Mr. Wadsworth, gardener to G. Egginton, Esq.; 2. Mr. William Bolton; 3. Mr. Wadsworth; 4. Mr. William Bolton. Coloured Ground: 1. Mr. William Bolton; 2. Mr. R. Davies; 3. and 4. Mr. Wadsworth. Bouquets: 1.

Mr. D. Brown; 2. Mr. G. Wharton; 3. Mr. T. P. Smithson. — *Culinary Vegetables*. Lettuce, Cos: 1. and 2. Mr. H. Blundell, 3. Mr. G. Wharton; 4. Mr. Allinson. Cabbage: 1. Mr. Allinson; 2. and 3. Mr. G. Wharton; 4. Mr. W. V. Norman. Potatoes (grown in the open air), Kidney: 1. Mr. Allinson; 2. Mr. T. Simpson, gardener to Mr. Casson; 3. Mr. T. P. Smithson; 4. Mr. John Jones. Any other description: 1. Mr. Cankrein; 2. Mr. Robson; 3. Mr. John Jones; 4. Mr. T. Plumber. Best plate of Vegetables (Mushrooms), Mr. Davies. (*Hull Gazette*, May 29. 1830.)

DURHAM AND NORTHUMBERLAND

Botanical and Horticultural Society of Durham, Northumberland, and Newcastle upon Tyne. — May 14. The following prizes were adjudged: —

For the best green and the best china-edged auriculas, viz. Lord Eldon and Lord Exmouth, silver medals, and for the best self-coloured auricula, Scotia, the bronze medal, to Mr. John M'Queen, gardener to S. W. Parker, Esq., Scots House. For the best grey-edged auricula, Wilson's Royal George, the silver medal, to Mr. John Wilson, Newcastle. The above were all seedlings, raised by Mr. M'Queen and Mr. Wilson; and Mr. M'Queen's seedling, Lord Eldon (a very fine flower), gained the seedling prize last season. For the best double hyacinth, Groot Voort, the silver medal, to George Stephenson, Carr's Hill, near Gateshead. For the best single hyacinth, Bonaparte, the silver medal, to Mr. William Kelly, gardener to A. Donkin, Esq., Jesmond. For the best polyanthus, the bronze medal, to Mr. T. Cooke, gardener to T. W. Beaumont, Esq., Bywell Hall. For the best six lettuces, the bronze medal, to Mr. John Ward, gardener to C. J. Clavering, Esq., Axwell Park. For the best exotic plant, *Cactus speciosissima*, in flower, the silver medal, to Mr. Adam Hogg, at Messrs. Falla and Co.'s, Gateshead. For the best bouquet of flowers, the silver medal, to Mr. T. Cooke, gardener to T. W. Beaumont, Esq., Bywell Hall. For the best red currant wine, fourteen years old, the silver medal, to Mr. W. Dunlop, Newcastle. Some hemp and rope, grown and manufactured at the prison of Durham, of much superior quality to last year's, were sent by Mr. Frushard, governor of the prison. Several very beautiful exotics, in great perfection, were exhibited by members of the Society; the magnificent *Cactus speciosissima*, from Messrs. Falla's, attracted universal attention and unparalleled admiration. Mr. Hall of Beacon Lough exhibited thirteen varieties of seedling apples, in very good keeping. A curious assortment of proliferous ranunculuses, from Sicily, were exhibited by Mr. J. Johnson, of Gateshead; and a beautiful drawing of the splendid *Crinum giganteum*, shown last year by C. J. Clavering, Esq., and drawn by Miss Haswell, of Summer Hill Terrace, was sent to the exhibition. (*Newcastle Courant*, May 15.)

June 11. — The following prizes were adjudged: —

For the best melon (Green-fleshed Egyptian), and for the best dish of grapes of sorts, silver medals to Mr. Scott, gardener to J. C. Lamb, Esq., Ryton. For the best half-peck of potatoes, from the open ground, and for the best half-peck of peas, silver medals, to Mr. Joseph Clarke, gardener to Mrs. Bewicke, Close House. For the best bybloemen tulip (Madame Pompadour), a silver medal, to Mr. Matthew Bates, Kenton. For the best rose white ground tulip (Rose Guerrier), a silver medal, to Mr. Moderell, gardener to J. C. Anderson, Esq., Point Pleasant. For the best bizard tulip (Maddock's Yellow), the silver medal, to Mr. Thomas Smith, Heaton. For the best bouquet of scarlet and white Brompton stocks, a silver medal, to Mr. J. Harrop, Sunderland. For the best exotic plant in flower (*Nerium splendens*), the silver medal, to Mr. Moderill, gardener to J. C. Anderson, Esq., Point Pleasant. For the best bouquet of flowers, the silver medal, to Mr. T. Cook, gardener to T. W. Beaumont, Esq., Bywell Hall. For the best white currant wine, the silver medal, to Mr. William Dunlop, Newcastle. A fine seedling *Pelargonium*, raised from the seed of *P. Daveyanum*, was exhibited by Mr. C. Robson, from the garden of Dr. Headlam, of Jesmond Dean; Mr. Robson called it "Priam;" a silver medal was voted to Mr. Robson by the judges for it. The show of tulips and bouquets of flowers was very magnificent, and, considering the late weather, truly surprising. The following was omitted in the account of the exhibition in May last: — For the best twenty-five heads of asparagus, the silver medal to Mr. Joseph Cooke, gardener, Bradley Hall. (*Ibid.*, June 12.)

The Darlington Florist and Horticultural Society. — May 26. Prizes were adjudged as follows: —

Plants. Stove: 1. *Lilium concolor*, Mr. Watson; 2. *Ixia crocata*, Mr. Lawson; 3. *Amaryllis formosissima*, Mr. Andrews. Green-house: 1. *Melaleuca floribunda*, and 4. *Calceolaria rugosa*, Mr. Lawson; 2. *Calceolaria corymbosa*, 3. *Elichrysium humile*, Mr. Watson. *Ericas*: 1. *Ventricosa coccinea*, and 3. *Odorata rosea*, Mr. Watson; 2. *Tricolor*, Mr. Lawson. *Pelargoniums*. White grounds: 1. Apollo, and 2. Macranthon, Mr. Lawson, gardener to James Backhouse, Esq., West Lodge; 3. Macranthon, Mr. Boyd. Scarlet grounds: 1. Bethallia, 2. Moore's Victory, and 3. Shakspeare, Mr. Lawson. Purple grounds: 1. Majestueuse, 2. Humei, and 3. Royal George, Mr. Lawson. Selfs: 1. Cape Scarlet, Mr. Pattison; 2. Basilisk, Mr. Watson. Exotic Bouquet: 1. Mr. Hodgson, gardener to General Aymer, Walworth Castle. Hardy bouquet: 1. Mr. Hodgson; 2. Mr. Pearson. — *Flowers*. Tulips. Bizards: 1. and 2. Mr. Stubbs, gardener to Lord Prulhoc, Stanwick Park; 3. Mr. Lawson. Bybloemens: 1. Mr. Nicholson; 2. Mr. Lawson; 3. Mr. Stubbs. Roses: 1. and 2. Mr. Stubbs; 3. Mr. Beckwith. Doubles: 1. Mr. Beckwith; 2. and 3. Mr. Stubbs. Selfs: 1. and 2. Mr. Stubbs; 3. Mr. Lawson. Ranunculuses: 1. and 2. Mr. Headley, nurseryman, Yarm; 3. and 4. Mr. Pattison, gardener to Edward Pease, Esq. Double Anemones: 1. and 4. Mr. Pattison; 2. and 3. Mr. Headley. — *Fruit*. Apples. Eating: 1. Mr. Telford, gardener to Major Hartley, Middleton Lodge; 2. Mr. Sanderson, gardener to Captain Hewgill. Baking: 1. Mr. Hogget, gardener to William Allan, Esq., Blackwell Grange; 2. Mr. Sanderson. — *Culinary Vegetables*. Asparagus: 1. Mr. Beckwith, gardener to Jacob Maude, Esq., Selaby Hall; 2. Mr. Andrews, gardener to John Beaumont Pease, Esq. Cucumbers: 1. Mr. Headley; 2. Mr. Boyd, gardener to John Allan, Esq. Blackwell; 3. Mr. Spence, market-gardener, Darlington. Cabbages: 1. and 3. Mr. Spence; 2. Mr. Telford. Peas, Mr. Telford. Potatoes: 1. Mr. Telford; 2. Mr. Hodgson; 3. Mr. Spence. Mr. Hodgson exhibited a beautiful plate of strawberries. (*Ibid.*, June 12.)

The Heworth Society of Florists held its Annual Meeting for the show of auriculas on May 5, and the prizes were adjudged as follows: —

1. Metcalf's Lancashire Hero, and 3. Cleugh's Defiance, Mr. David Young, gardener to Joseph Shield, Esq.; 2. Taylor's Ploughboy, Mr. M. Robson; 4. Sulter's Garland, and 5. Ridling's Junius, Mr. George Beiston. Mr. Michael Robson produced a beautiful green-edged seedling, which was much and deservedly admired: he named it Matthew Bell, M.P. Mr. George Beiston exhibited the best bouquet of flowers. (*Ibid.*, May 15.)

Maften Tulip Show. — May 3. The prizes were awarded as follows: —

Whites: 1. *Cerise Primo Superbe*, 2. *La Sultane*, and 4. *Rose Mignon*, Mr. Hall; 3. *Belle Flammante*, Mr. Johnson; 5. *Ambassadeur d'Hollande*, Mr. Charlton. Yellows: 1. *Gloria Mundi*, 3. *Grotius*, and 5. *La Belle Financière*, Mr. Hall; 2. *Suprema Superfine*, and 4. *Marie Louise*, Mr. Charlton. (*Newcastle Courant*, June 12.)

The Heworth Society of Florists. — May 26. Prizes adjudged as follows: —

1. *Rose Triomphe Royal*, Mr. George Stephenson; 2. *Roi de Macedoine*, and 4. *Bien Fait*, Mr. David Young; 3. *Tour de Salisbury*, Mr. A. Bouglas; 5. *La Cantique*, Mr. George Briston. Mr. George Stephenson produced the best bouquet of Flowers, and Mr. Michael Robson the best double golden wallflower. (*Ibid.*, June 12.)

The Hendon Independent Florists held their Annual Show of Tulips on the 31st of May, when the prizes were adjudged as follows, viz: —

1. *Boadicea*, and 2. *Maddock's Yellow*, Mr. John Hull; 3. *General Washington*, Mr. Thomas Hull; 4. *Rose Triomphe Royal*, Mr. James Sutton; 8. *Prince of Orange*, Mr. Robert Shawkell. (*Ibid.*, June 12.)

The Botanical and Horticultural Society of Hexham held a Meeting on the 3d of May, for the exhibition of flowers, fruits, and vegetables, when prizes were awarded as follows: —

To Mr. James Scott, gardener to Edward Charlton, Esq., Sandhoe, for auriculas, 1. *Warris's Blucher*, 2. *Falla's Swiss*, and 5. *Riding's Junius*: Hyacinths, 1. *Marie Louise*; best bouquet of flowers; best brace of cucumbers; and the best four heads of broccoli. To Mr. Robert Charlton, gardener, Wall, for the 3d auricula, *Broadhead's Sir George Saville*; Hyacinths, 2d, *Groot Voort*; and for the best twelve dessert apples. To Mr. Robert Grey, gardener, Humshaugh, for the 4th auricula, *Metcalf's Lancashire Hero*, and the best four lettuces. To Mr. Thomas Watson, gardener to James Kirsop, Esq., Spital, for the best four cabbages. To Mr. Joseph Robson, gardener, Hexham, for the best four stalks of rhubarb; and to the Rev. C. Lee, Stagshaw, for the best twenty-five heads of asparagus. There was a fine dish of green peas from the garden of W. Donkin, Esq., Sandoe; and likewise a dish of very fine peas from the garden of James Kirsop, Esq., Spital. Also a fine specimen of the King of the Forest Apple, from the garden of N. Clayton, Esq., Chesters; together with an equal specimen of the *Drudge's Beauty of Wilts*, from the garden of Edward Charlton, Esq., Sandhoe; and a specimen of *Pomme de Asse* apples, from the garden of Mr. Robert Charlton, Wall. (*Ibid.*, May 15.)

The Morpeth Florists' Society held its Annual Show of Tulips on the 27th of May, at the house of Mrs. Thompson, when the following prizes were adjudged: —

Rose: 1. *Le Brillant Eclatante*, Mr. R. Lewins; 2. *Cerise Primo*, and 3. *Cerise Triomphante*, Mr. Hindhaugh; 4. *Noble Blanche*, Mr. E. Noble; 5. *Rose Triomphe Royal*, Mr. Hindhaugh. Bybloemens: 1. *La Pucelle*, Mr. Hindhaugh; 2. *Roi de Macédoine*, Mr. E. Noble; 3. *Bien Fait*, Mr. M'Lellan; 4. *Violet Bellissimo*, Mr. E. Noble; 5. *Violet Alexandre*, Mr. Hindhaugh. Bizards: 1. *Liquirus*, Mr. R. Lewins; 2. *Grandeur du Monde*, and 3. *General Bolivar*, Mr. E. Noble; 4. *Leopoldina*, and 4. *Demetrius*, Mr. M'Lellan. (*Ibid.*, June 12.)

Pandon Dean Florists' Society. — May 8. Prizes were awarded as follows: —

Auriculas. 1. *Moat's St. George*, Mr. R. Mains; 2. *Grimes's Privateer*, Mrs. S. Dodds; 3. *Salter's Garland*, Mr. J. Lister; 4. *Thorneycroft's Invincible*, Mr. G. Belt; 5. *Smiling Beauty*, Mr. J. Lister. Hyacinths: 1. *Prince William Frederick*, and 2. *Grande Blanche Impériale*, Mr. O. Robson; 3. *Couronne Blanche*, Mr. S. Dodds; 4. *Blue Rose Riga*, Mr. O. Robson; 5. *Candidus strobæus*. (*Ibid.*, May 15.)

LANCASHIRE

Liverpool Horticultural Society. — April 28. The Spring Show of auriculas was highly gratifying to the friends of this very popular Society. The various productions were rich in all the glories of nature at this smiling period of the year, and excited from the brilliant groups present the warmest praise. The flowers were in great abundance, and the esculents luxuriant and rich. The arrangements were in the best order, and the "Harmonic Band," as usual, failed not to encrease the attractions of the scene. The following is a list of the prizes: —

Premier Prize: 1. *Booth's Freedom and Ringleader*, Mr. Turner; 2. *Booth's Freedom and Ringleader*. Stove Premiers: 1. *Cactus speciosissima*, Mrs. E. Cropper; 2. *Cyrtopodium Andersoni*, variegated, R. Harrison; 3. *Ixora coccinea*, Thomas Davies. Green-house Premiers: 1. *Azalea sinensis lutea*, Messrs. Dickson; 2. *Azalea ledifolia*, Thomas Davies; 3. *E'pactris grandiflora*, Mrs. Rathbone.

Plants. Stove: 1. *Cactus speciosissima*, Mr. Preston; 2. *Cyrtopodium Andersoni*, Mr. R. Harrison; 3. *Cactus speciosa*, Mrs. E. Cropper; 4. *Amaryllis Johnsoni*, Mr. R. V. Yates; 5. *Crinum capense*, Mr. Powell; 6. *Thunbergia alata*, Mr. Skirving; 7. *Amaryllis psittacina*, Mr. Powell; 8. *Calanthe veratrifolia*, Mr. R. Harrison. Green-house: 1. *Calceolaria corymbosa*, Mr. W. G. Walmesly; 2. *Correa speciosa*, Mrs. Rathbone; 3. *Calceolaria rugosa*, Mrs. E. Cropper; 4. *Boronia denticulata*, Mr. Whalley; 5. *Polygala grandiflora*, Mrs. Rathbone; 6. *Eutaxia myrsinifolia*, Mr. H. Wilson; 7. *Azalea ledifolia*, Mr. Powell; 8. *E'pactris pulchella*, Mrs. Rathbone. Ericas: 1. *Cylindrica*, H. B. Hollinshead, Esq.; 2. *Odorata*, Mr. H. Wilson; 3. *Andromeda odorata*, and 4. *Scariosa*, Mr. T. Davies; 5. *Grandinosa*, Mr. Whalley; 6. *Perspicua*, Mr. H. Wilson; 7. *Hartnellii*, Mr. Whalley; 8. *Mutabilis*, Mr. T. Davies. Herbaceous: 1. *Verbena Melandres* [chamaedryoides Sw.], Mrs. G. F. Dickson; 2. *Lithospermum pulchellum*, and 3. *Eupatorium ceanothæifolium*, Mr. Skirving; 4. *Gæum coccineum*, Mrs. Rathbone; 5. *Lithospermum dauricum*, Mr. Skirving; 6. *Primula cortusoides*, Mr. Whalley. Baskets of Plants: 1. Mrs. E. Cropper; 2. Mr. Thomas Davies; 3. Mr. Thomas Walker. — **Flowers.** Auriculas. Green-edged: 1. *King*, Mr. T. Boardman; 2. *Waterloo*, Mr. T. Ingham; 3. *Freedom*, Mr. Turner; 4. *Ploughboy*, Mrs. Rathbone; 5. *Colonel Taylor*, Mrs. S. Ogden; 6. *Hoffley's Nelson*, Mr. T. Conoley; 7. *Jubilee*, Mr. S. Ogden. Grey-edged: 1. *Privateer*, Mr. T. Conoley; 2. *Ringleader*, and 3. *Newton Hero*, Mr. S. Ogden; 4. *Revenge*, Mr. T. Ingham; 5. *Morning Star*, Mr. I. Faulkner; 6. *Bearson's Liberty*, Mr. S. Ogden; 7. *Lord Bridport*, Mr. J. Leigh. White-edged: 1. *Taylor's Glory*, Mr. T. Conoley; 2. *Conqueror*, Mr. Griffiths; 3. *Regulator*, Mr. T. Conoley; 4. *Emulous*, Mr. S. Ogden; 5. *Venus*, Mr. T. Conoley; 6. *Crompton's Admiral Gardiner*, Mr. Bruce; 7. *Pillar of Beauty*, Mr. T. Ingham. Selfs: 1. *Ned Ludd*, Mr. T. Boardman; 2. *Metropolitan*, and 3. *Flora's Flag*, Mr. T. Conoley; 4. *Lord Milton*, Mr. Horsfall; 5. *True Blue*, and 6. *Goldfinch*, Mr. T. Conoley; 7. *Black Joke*, Mr. Horsfall. Shaded Selfs: 1. *Queen of May*, Mr. T. Conoley; 2. *King of the Alps*, Mr. T. Harrison; 3. *Beauty of Everton*, Mr. Bruce; 4. *Seedling*, Mr. T. Harrison; 5. *Favourite*, Mr. Horsfall; 6. and 7. *Seedlings*, Mr. T. Harrison. Poly-

anthuses: 1. Alexander, Mr. T. Ingham; 2. Regent, Mr. Turner; 3. Princess Royal, Mr. T. Ingham; 4. Bang Europe, 5. George the Fourth, and 6. Lady Mary, Mr. Bruce; 7. Gold Lace, Mr. R. F. Buckley; 8. Turner's Defiance, Mr. T. Ingham. Seedling Auricula, Mr. T. Boardman. Maiden Growers: 1. Green-edged, 2. White-edged, 3. Grey-edged, and 4. Self-edged, Mr. Westland. Hyacinths. Red double: 1. Mr. Skirving; 2. Mr. Powell; 3. Mr. Whalley. Blue double: 1. Mr. Faulkner; 2. and 3. Mr. Whalley. White double: 1. Mr. W. Smith; 2. Mr. Whalley; 3. Mr. Powell; Yellow: 1, 2, and 3. Mr. Whalley. Red single: 1. Mr. Whalley; 2. Mr. Powell; 3. Mr. Whalley. Blue single: 1. and 2. Mr. W. Smith; 3. Mr. Faulkner. White single: 1. and 2. Mr. Powell; 3. Mr. Whalley. Baskets of cut Flowers: 1. Mr. S. Ellison; 2. and 3. Mr. Whalley. — *Fruit*. Apples: 1. Mr. Dobson; 2. and 3. Mr. W. Smith; 4. Mr. Horsfall. Pears: 1. Mr. Manifold; 2. H. B. Hollinshead, Esq.; 3. Mr. Whalley; 4. Mrs. E. Cropper. Grapes. Black: 1. Mr. Forrest; 2. and 3. Mr. Tayleur. White: 1. Mr. Forrest; 2. Mr. Woodhouse; 3. Mr. Forrest. Pines: 1. Sir R. Brooks; 2. Mr. T. Davies; 3. Mr. Powell. Strawberries: 1. Mr. J. Clare; 2. Mr. Roskell. Nuts: 1. and 2. Mr. Whalley. — *Culinary Vegetables*. Cucumbers: 1. Mr. H. Wilson; 2. Mr. R. Harrison; 3. Mr. W. Smith; 4. Mr. H. Wilson. Asparagus: 1. Mr. W. Smith; 2. Mr. R. V. Yates; 3. Mr. Whalley; 4. H. B. Hollinshead, Esq. Rhubarb: 1. and 2. Mr. Roskell; 3. Mr. Horsfall; 4. Mrs. E. Cropper. Kidneybeans: 1. Mr. J. B. Yates; 2. Mr. T. F. Dyson; 3. Mr. J. Clare; 4. Mr. C. Tayleur. Potatoes: 1. Mr. H. Wilson; 2. Mrs. G. F. Dickson; 3. and 4. Mrs. Rathbone. Sea-kale: 1. Mr. Whalley; 2. Mrs. Rathbone; 3. and 4. Mr. Whalley. Mushrooms: 1. Mrs. Rathbone; 2. Mr. W. Smith. Broccoli: 1. Mr. J. A. Yates; 2. Mr. Manifold; 3. Mr. J. A. Yates; 4. Mrs. Earle. Cabbage: 1. Mrs. Rathbone; 2. Mr. Skirving; 3. Mrs. Rathbone; 4. Mr. Powell. Lettuce: 1. and 2. Mr. J. A. Yates; 3. Mr. W. Smith.

Extra-Prizes. Apples, Mrs. Earle (two prizes), Mr. Manifold, H. B. Hollinshead, Esq. Strawberries, Mr. John Topham. Lemon tree, Mr. William Barton. Orange tree, Mr. Thomas Davies. Lemons, Rev. R. Gwilym. Gooseberries, Mrs. Pyke. Fig tree, Mr. Powell. Asparagus, Mr. Whalley, Mrs. Rathbone. Baskets of plants and flowers, Mr. Powell, Mr. Horsfall, Mr. T. Davies, Mr. T. Walker, Miss Waterhouse, H. B. Hollinshead, Esq., Mr. Tayleur, Mrs. G. F. Dickson, Mr. Skirving (two prizes), Mr. Whalley, Mr. T. F. Dyson (two prizes), Mr. Dobson. *Acacia armata*, Mr. S. Woodhouse. *Cyrtanthus obliquus*, Mrs. Rathbone. *Gentiana acaulis* and *véna*, Mr. Skirving. *Georgina fimbriata*, Mr. Powell. *Pæonia Moultan*, Mr. Davies. *Kennedia monophylla*, Mr. Skirving. *Euphorbia punicea*, Mr. Horsfall. Cucumbers, Mrs. Rathbone. Parsley, Mr. Whalley. Potatoes, Mrs. Earle. Carrots, Mrs. Rathbone. Coffee, Mr. W. Smith. Damsons, Mr. Roskell. Peas, Mrs. G. F. Dickson.

The prize-money fixed upon by the Committee amounted to 50*l.*, but, the very valuable productions in all departments being so numerous, they were induced to give the very large amount of 30*l.* in extra-prizes. (*Gore's General Advertiser*, May 6.)

Liverpool Floral and Horticultural Show. — The Show of tulips, fruits, vegetables, and green-house plants, took place on May 27th. Many of the tulips exhibited were extremely beautiful, including flowers of every shade and of all varieties. The hot-house and green-house plants were even more splendid than the tulips, and the fruits and vegetables were of the finest kind. The strawberries were particularly large and beautiful. The following is a list of the prizes: —

Best Pan: 1. Trafalgar (feathered bizard), Bien Fait (feathered bybloemen), Comte de Vergennes (feathered rose), Surpasse la Cantique (flamed bizard), Alexander Magnus (flamed bybloemen), and Rose Unique (flamed rose), W. Turner, Haslingden; 2. Trafalgar (black baguet), Do Little, Phoenix Abdalonymus, and Rose Unique, T. Roby; 3. Surpasse Catafalque (black baguet), Heroine, Lord St. Vincent, Dido, and Triomphe Royal, Mr. Pyke.

Stove Premiers: 1. *Solandra grandiflora*, H. B. Hollinshead, Esq.; 2. *Crinum hybridum amabile capense*, Mr. R. Harrison; 3. *Combretum purpureum*, Mr. R. Powell. *Greenhouse Premiers*: 1. *Choryzema Henchmanni*, Mr. Thomas Davies; 2. *Salpiglossis picta* var., Messrs. Dickson; 3. *Melaleuca fulgida*, Mr. Skirving.

Plants. *Stove*: 1. *Cactus speciosissima*, Mr. G. Cunningham; 2. *Maranta zebrina*, Mr. Powell; 3. *Dionæa muscipula*, Mr. Skirving; 4. *Crinum amabile*, and 5. *Ixora coccinea*, Mr. G. Cunningham; 6. *Gloxinia speciosa alba*, S. Colquitt, Esq.; 7. *Erythrina Crista galli*, Mr. Horsfall; 8. *Thunbergia alata*, Mr. C. Tayleur. *Green-house*: *Calceolaria thyrsiflora*, Messrs. Whalley; 2. *Elichrysium proliferum*, H. B. Hollinshead, Esq.; 3. *Alstroemeria pelegriana*, Mr. Skirving; 4. *Elichrysium humile*, Rev. R. Gwilym; 5. *Calceolaria rugosa* var. *latifolia*, Mrs. Rathbone; 6. *Boronia pinnata*, Messrs. Whalley; *Cyrtanthus obliquus*, Mr. Powell; 8. *Calceolaria plantaginea*, Messrs. Dickson. *Ericas*: 1. *Translucens*, Rev. R. Gwilym; 2. *Ventricosa* var., Messrs. Whalley; 3. *Odorata*, and 4. *Vestita fulgida*, Mr. T. Davies; 5. *Densa*, Messrs. Whalley; 6. *Ventricosa*, H. Wilson, Esq.; 7. *Linnæa superba*, Rev. R. Gwilym; 8. *Buggiana*, Mr. G. Cunningham. *Palargoniums*: 1. Mrs. Rathbone; 2. *Victory*, Mr. G. Cunningham; 3. *Latilobium*, and 4. *Davey-annum*, Mr. T. Walker; 5. *Paul Pry*, Mr. Skirving; 6. *Humei*, Messrs. Whalley; 7. *Defiance*, Mr. Isaac Hadwen; 8. *Smithii*, Mr. T. Walker. *Herbaceous*: 1. *Lupinus polyphyllus*, Messrs. Dickson; 2. *Pentstemon ovatus*, Mr. R. Harrison; 3. *Phlox setacea*, Mr. E. Roscoe; 4. *Aquilegia alpina atropurpurea*, 5. *Papaver alpinum*, and 6. *Ramonda pyrenæica*, Messrs. Dickson; 7. *Verbena Melindres* [*chamædryoides* Sw.], Mr. T. Davies; 8. *Lilium longiflorum*, Mrs. Cropper. *Shrubs*: 1. *Pæonia arborea*, Mr. G. Cunningham; 2. *Rhododendron ponticum album*, Messrs. Dickson; 3. *Rhododendron catawbiense*, Mr. G. Cunningham; 4. *Rosa Noisettia*, and 5. *Hydrangea hortensis*, Mr. Skirving; 6. *Spartium scoparium sulphureum*, Messrs. Dickson; 7. *Azalea variegata orange*, Mr. G. Cunningham; 8. *Rhododendron ferrugineum*, Mr. Skirving. *Baskets of Plants*: 1. H. Wilson, Esq.; 2. Mr. T. Davies; 3. Mr. T. Walker; 4. Mr. Horsfall. — *Flowers*. *Feathered Bizards*: 1. Surpasse Catafalque, Mr. Turner; 2. Trafalgar, S. Ogden; 3. Bolivar, and 4. La Cantique, Mr. Turner; 5. Sir Sydney Smith, Messrs. Whalley; 6. Duc de Savoie, and 7. Seedling, Mr. Turner. *Flamed Bizards*: 1. Albion, Mr. Wakefield; 2. *Iustre de Beauté*, W. Leighton, Esq.; 3. Phoenix, T. Roby; 4. Smith's Alexander, W. Leighton, Esq.; 5. Duke of Manchester, S. Ogden; 6. Abercrombie, W. Leighton, Esq.; 7. Seedling, J. M. Taylor. *Feathered Bybloemens*: 1. Baguet, William Leighton, Esq.; 2. Bien Fait, Mr. Turner; 3. Lord of the Manor, Mr. Faulkner; 4. Rowbottom's Incomparable, S. Ogden; 5. Tout, and 6. Roi de Siam, Mr. Turner; 7. Gadby's Magnificent, J. M. Taylor. *Flamed Bybloemens*: 1. Violet Wallers, Mr. Whittingham; 2. Triomphe de Lisle, W. Leighton, Esq.; 3. *Violette fondée Noire*, and 4. Tout, Mr. Whittingham; 5. Magnus, Mr. Pyke; 6. *Violette Remarquable*, Mr. Hulme; 7. Telegraph, Mr. Whittingham. *Feathered Rose or Cherry*: 1. Do Little, 2. Comte de Vergennes, 3. Hero of the Nile, 4. Walworth, 5. Duc de Bronte, and 6. Holden's Rose, W. Leighton Esq.; 7. Rose Cornelia, Mr. Turner. *Flamed Rose*: 1. Triomphe Royal, W. Leighton, Esq.; 2. Vesta, Mr. Turner; 3. Unique, S. Ogden; 4.

Walworth, Mr. Whittingham; 5. Rose Quarto, W. Leighton, Esq.; 6. Lord Hill, S. Ogden; 7. Roi de Cerise, W. Leighton, Esq. Double: 1. La Claire, Messrs. Whalley; 2. Mariage de ma Fille, Mr. Turner; 3. Lutea Rubra, Messrs. Whalley; 4. Unknown, J. Harrison. Selfs: 1. Charbonnier breeder, T. Harrison; 2. Glaphyra breeder, Mr. Turner; 3. Bybloemen breeder, S. Ogden. Maiden Growers. Feathered Bizards: 1. Beurrees, W. Fletcher; 2. Surpasse Catasfalque, Mr. H. Porter. Flamed Bizards: 1. Surpasse la Cantique, and 2. Whitehead's Seedling, Mr. Fletcher. Feathered Bybloemens: 1. Partout, and 2. Black Baguet, W. Fletcher. Flamed Bybloemens: 1. Magnificent, W. Fletcher; 2. Unknown, Mr. H. Porter. Feathered Rose: 1. Do Little; 2. Hero of the Nile, W. Fletcher. Flamed Rose: 1. Triomphe Royal, and 2. Duc de Bronte, W. Fletcher. Georginas. Double: 1. Turban, Mr. R. Preston; 2. Trifidra, and 3. Crimson, Mr. G. Cunningham; 4. Speciosa, Mr. T. Davies. Single: 1. Coccinea, Mr. Skirving; 2. Purpurea, and 3. Crimson, Mr. C. Cunningham. Pæonies: 1. Papaveræa, Mr. R. Harrison; 2. Moutan, Mr. Skirving; 3. Rosea, Mr. Cunningham; 4. Albicans, and 5. Paradæxa fimbriata, Mr. T. Davies; 6. Officinalis plena, Messrs. Whalley. Cut Flowers: 1. Mr. Powell; 2. Messrs. Whalley; 3. and 4. Mr. S. Ellison. — *Fruit*. Oranges: 1. Mr. T. Davies; 2. W. Smith, Esq. Lemons: 1. H. B. Hollinshead, Esq.; 2. J. W. Thomas. Pines: 1. Mr. G. Cunningham; 2. Mr. T. Davis. Grapes. Black: 1. and 2. Mr. C. Tayleur; 3. S. Woodhouse. White: 1. Mr. G. Cunningham; 2. S. Colquitt, Esq.; 3. W. Smith, Esq. Melons: 1, 2, and 3. Mrs. Rathbone. Figs: 1. L. Rawden; 2. H. Wilson, Esq. Strawberries: 1. Mr. Roskell; 2. Rev. R. Gwilym; 3. Mr. Roskell. Apples: 1. Mr. Horsfall; 2. Mr. Dobson; 3. and 4. W. Smith, Esq. — *Culinary Vegetables*. Peas: 1. Rev. R. Gwilym; 2. Mr. R. Preston; 3. W. Smith, Esq.; 4. H. Wilson, Esq. Beans: 1. Mrs. Rathbone; 2. Rev. R. Gwilym. Kidneybeans: 1. Mr. T. Davis; 2. Mr. Powell; 3. Mrs. Rathbone. Cauliflowers: 1. and 2. Mrs. Rathbone; 3. H. Wilson, Esq.; 4. Mr. Horsfall. Asparagus: 1. Mr. Roskell; 2. Mr. S. Woodhouse; 3. W. Smith, Esq. Cucumbers: 1. and 2. Mr. Roskell; 3. and 4. H. B. Hollinshead, Esq. Carrots: 1, 2, and 3. Mrs. Rathbone. Turnips: 1. Mr. R. Preston; 2. Mr. T. Walker; 3. Mr. R. Preston. Lettuces: 1. Mr. T. Davis; 2. Mr. Manifold; 3. Mrs. G. F. Dickson. Mushrooms: 1. C. Downie; 2. H. B. Hollinshead, Esq.; 3. Mr. W. Myers. Nuts, 1. and 2. Messrs. Whalley.

Extra-Prizes. Apples, W. Smith, Esq., Mr. Dobson, Mr. S. Woodhouse, W. Smith, Esq. Celery, W. Smith, Esq. Cabbage, Mrs. Rathbone, W. Smith, Esq. Parsley, Mr. Skirving. Baskets of Plants, Rev. R. Gwilym, R. Preston, Mr. Powell, Mrs. Pyke, Isaac Hadwen, Messrs. Whalley, Mr. C. Shand, Mr. T. Davis, T. Walker, S. Ellison, Messrs. Whalley, H. B. Hollinshead, Esq., Mrs. Cropper. Cut Flowers, Mrs. Rathbone; Crinum amabile, Mr. Horsfall; Fuchsia gracilis, Mr. Skirving; Primula farinosa, Messrs. Whalley; Sempervivum ardreum, Mr. Rawthorne. Asparagus, H. B. Hollinshead, Esq. Mushrooms, W. Smith, Esq. Cucumbers, W. Smith, Esq., Mrs. Rathbone, S. Woodhouse. Erythrina Crista galli, Mr. R. Preston. Verbena Menziesii, Mrs. G. F. Dickson, and Ardisia crenulata, Mr. Powell. (*Gore's General Advertiser*, June 3.)

Rochdale Floral and Horticultural Society. — April 28. The following prizes were awarded, viz.: —

Plants. Stove: 1. Strelitzia regina, 2. Erythrina Crista galli, 3. Musa coccinea, and 4. Bluetia Tankerville, J. Entwisle, Esq. Green-house: 1. Azalea indica alba, Mr. R. Robertson; 2. Elichrysium sesamoides, and 3. Euphorbia grandiflora, J. Entwisle, Esq.; 4. Amarillis vittata, Rev. W. R. Hay. Pelargoniums: 1. Octavius, E. Ashworth, Esq.; 2. Daveyannum, and 3. Victory, J. Entwisle, Esq. Grown without the protection of a green-house: Daveyannum, Mr. Robt. Chadwick. Hardy Herbaceous: 1. Trillium grandiflorum, Mr. George Haworth; 2. Uvularia grandiflora, and 3. Claytonia virginica, Mr. H. Midgley; 4. Gentiana verna, Mr. R. Scholfield; 5. Orobanchis verna, Mr. J. Taylor; 6. Trillium erectum var., Mr. J. Whitworth; 7. Adonis vernalis, Edw. Ball, Esq. Hardy bulbous-rooted: 1. Narcissus Grand Monarque, Mr. Henry Midgley; 2. N. Bulbocodium, Mr. J. Whitworth; 3. N. incomparabile, Mr. J. Taylor; 4. Fritillaria melagris, John Entwisle, Esq.; 5. Narcissus angustifolia, Mr. Edward Hilton. Hardy Shrubs: Rhodora canadensis, Mr. Robert Robertson; 3. Kalmia glauca, Mr. J. Whitworth; 3. Andromeda calyculata, John Entwisle, Esq.; 4. Amygdalus nana, Mr. Robert Robertson. For the best Erica, Erica cylindrica, John Entwisle, Esq. — *Flowers*. Auriculas: Lee's Col. Taylor, a premier prize to Mr. John Ecroyd. Green-edged: 1. Booth's Freedom, Mr. John Taylor; 2. Highland Laddie, Colonel Lee; 3. Jolly Tar, Mr. J. Cheetham; 4. Nelson, Mr. H. Midgley; 5. King, and 6. Jingle Johnny, Mr. J. Cheetham; 7. Standard, Mr. T. Clegg. Grey-edged: 1. Ringleader, Mr. James Taylor; 2. Privateer, Mr. J. Cheetham; 3. Liberty, Colonel Lee; 4. Waterloo, Mr. J. Taylor; 5. Lady of Honour, Mr. J. Woolfenden; 6. Alpine Shepherdess, Mr. Ed. Hilton; 7. Revenge, Col. Lee. White-edged: 1. Regular, Mr. J. Mills; 2. Venus, Mr. H. Thomas; 3. Incomparable, Mr. J. Taylor; 4. Regulator, Mr. J. Cheetham; 5. Rule all, Col. Lee; 6. Glory, Mr. J. Ecroyd; 7. Seedling, Mr. J. Woolfenden. Selfs: 1. Lord Lee, Mr. T. Clegg; 2. Ned Ludd, Col. Lee; 3. True Blue, Mr. J. Taylor; 4. Stadholder, Mr. T. Clegg; 5. Lord Primate, Mr. J. Etches; 6. Metropolitan, Mr. H. Midgley; 7. Flora's Flag, Mr. J. Cheetham. Alpines, or Shaded Selfs: 1. Alpine King, Edw. Ball, Esq.; 2. King of the Alps, Clement Royds, Esq.; 3. Moses, Mr. J. Ecroyd; 4. Lady Douglas, and 5. Seedling. Polyanthus: 1. Pearson's Alexander, and 2. Seedling, Mr. Thomas Clegg; 3. Princess Royal, Mr. J. Tweedale; 4. Defiance, and 5. Beauty of Over, Mr. J. Mills; 6. George the Fourth, Mr. J. Cheetham; 7. Princess of Wales, Mr. J. Etches. Auricula. Green-edged (largest bunch): Highland Laddie, Mr. J. Cheetham. Grey-edged, Waterloo, and White-edged, Incomparable, Mr. J. Taylor. Self, Lord Lee, Mr. J. Taylor. Alpine, Unknown, Mr. J. Whitworth. Polyanthus, Alexander, Mr. J. Taylor. Hyacinth. Double: 1, 2, 3, and 4. Mr. John Whitworth. Single: 1. and 2. Mr. John Whitworth; 3. Mr. W. Holland; 4. Mr. J. Whitworth. Best Basket of Flowers, Mr. J. Entwisle, Esq. — *Culinary Vegetables*. Sea-kale, Clement Royds, Esq. New Potatoes: 1. Mr. Robt. Robertson; 2. Edmond Ashworth, Esq. Rhubarb: 1. Edmond Ashworth, Esq.; 2. Clement Royds, Esq. Cucumbers and Mushrooms, Mr. John Ashworth. French Beans, Clement Royds, Esq. Cauliflower Broccoli, Edmond Ashworth, Esq. — J. Ecroyd.

Bolton Horticultural Society. — May 20. The following is the award of prizes: —

Plants. Alpina nutans (silver cup), J. Ridgway, Esq. Stove: 1. Combrætum purpureum, W. Hulton, Esq.; 2. Bluetia Tankerville, J. Ridgway, Esq.; 3. Oxyanthus speciosus, 4. Crinum scabrum, 5. Ardisia colorata, 6. Crinum longifolium, and 7. Besleria cristata, E. Silvester, Esq.; 8. Cactus speciosissimus, W. Hulton, Esq.; 9. Clerodendron Kämpferianum, and 10. Solandra grandiflora, E. Silvester, Esq. Polygala speciosa (silver cup), J. Ridgway, Esq. Greenhouse: 1. Bordonia serrulata, E. Silvester, Esq.; 2. Chorizema Henchmanni, 3. Sprengelia incarnata, 4. Verbena pulchella, and 5. Bordonia denticulata, R. Holland, Esq.; 6. Capparis spinosa, E. Silvester, Esq.; 7. Pultenaea villosa, 8. Calceolaria rugosa, 9. Calceolaria integrifolia, and 10. Correa speciosa, R. Holland, Esq. Erica: 1. Gemmifera, 2. Tricolor, 3. Munda, 4. Ventricosa, and

Extra-Prize Turnips, W Hulme, and J Ridgway, Esq., Bolton (Branche, May 29)

Best Stone Plant, Eugenia Jordan, K. Stewart, Esq. Best Green-house Plant, Corva's species, R. Holland, Esq. Best pair of four Auricula, as in each class, Colonel Taylor, Flournoy, Regulator, and Flag, R. Holland, Esq.

Extra Pearls 1 Lemon Tree, Mrs Crompton, Farnworth, 2 Camellia, R. Holland, Eng.,
Cauliflower Branch, W. Nelson, Eng.

DEVONSHIRE

South Devon and East Cornwall Balmaceda and Horticultural Society. — May 27.
Prizes were awarded as follows:—

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Collegers' Prize. Callage, Mr Napleton, Compton. Cashbow, Mr Sims, Plymouth.
 Chumblers, Mr Sims. Penn, Mr Napleton. Cos Lettins, Mr Napleton. Bouquet of Tulips,
 Mr Wood, gardener, Plymouth.

Letter From Mrs. Mack, Portland Square, for a splendid Geranium. Alderman Dunster-
ville, Plymouth, for seven pots of Giant Shasta. Commissioner Mann, for a fine group of Pelargoniums. Mr. Burge, Colport, for a beautiful specimen of Oregon. E. Bromley, Esq., Stoke, for two beautiful Calceolae Trees, with berries.

Judges.—Plants and flowers, Messrs. E. Lammotte, Reid, and Crawford; Fruit, Messrs. J. H. Lammotte, Booth, and Starland; Culinary vegetables, Messrs. Parker, Kay, and Palmer; Canners' Prices, Messrs. Cummings, Beattie, and Burns.

Among the preceding, the cedar trees from the garden of R. Druskey, Esq., of Stuka, and the beautiful specimens of the citrus tribe from the east of E. P. Bastard, Esq. M. P., Kittley, attracted particular and merited attention. The specimens of *Eugenia officinalis*, grown by Mr. Hays, given to the Rev. J. Lane, Calicut, were considered by competent judges as equal to the best of Jamaica growth.

The magnificence of the exhibition was greatly increased by contributions for that special purpose, without any pretensions to prize. We noticed a *Chama glabra*, from Admiral Boscage; a splendid bouquet of roses, with two beautiful double yellow flowers, from Captain Hare, Highgate House; a *Panandrea crinita*, from Quayaquil, in a vase with *Silene*, a *Cereus Papaya*, an *Acrostichum albidum*, a South American fern, a splendid *Asplenium's* Weddell, *Drosera* (Gruyden), *Arctostaphylos*, white moss rose, a deliciously fragrant *Panacrastrum* *Maritima*, and a splendid collection of hothouse (*Erica*, *Isia*, *anemone*, *hellebore*, *viola*, *verbena*, and *petalostema*, from Mr. Penney's nursery; a *Cactus speciosus*, a plant two years old, nearly 5 ft. high, a *Cactus* species, with a great number of flowers, a *Maurandia* *Maritima* and *Maurandia* *umbellata*, with beautiful flowers, *Fuchsia* *Andria*, *Fuchsia* *rubra*, *Lachen's* *crucifera*, *Alchymicum* *stans*, and a splendid collection of hothouse and petalostema from Mr. Penney's nursery. The opium manufactured by Mr. Cox, of His Majesty's dock-yard, from the large white puppy from Mr. Penney's, was declared by several medical gentlemen as superior to that generally imported. (Plymouth and Devonport Weekly Journal, June 2.)

SYMPTOMS

The Ayrshire Green-house Society.—*Kilmarnock, May 27.* The judges awarded the prizes as follows:—

Flowers. Cherry and Rose Tulips: Count de Vergennes, Roue de Berlin, Roue d'Orléans, Madame Dyzbours (Dutch), Pau Triomphe Royal, Mr John Brown, Kilmarnock. Five Bytiscum Tulips: Doryana, Louis the Batavich, Othello Aithron, Impératrice Filomena, Rowbotham's Incomparable, Mr John Brown. Five Blazed Tulips: Flamingo, Mr George Durbak, Sargemo Callaghan, Helen's William Pitt, Grand Cairo, Mr John Brown. Three Double Tawnyed Shells, Mr Robert Purvis, gardener to John Smith Cunningham, Esq., (Ayrington) — (Cairney Fairs). Early May Calbage 1 Monna Dyde and Gentien, Kilmarnock, & Mr Robert Purvis; & Mr James Young, gardener to James Fairlie, Esq, Helms & Mr Robert Roger, Kilmarnock. Early Turkeys 1 Mr Robert Purvis, & Mr James Young, Curriers, Mr James Young, Book Thirteen Asparagus 1 Mr James Young, & Mr Robert Purvis (Hagman), Mr Robert Purvis.

Of value articles came very fine early potatoes, lettuce, cresses, Agrostis umbellata, and other green house plants, by Mr Robert Purvis. A monstrous production of asparagus curiously twisted, early potatoes, and Papaver bracteatum, by Mr James Young. Flowering shrubs, Rhododendron, Azalea, Lódium, &c., by Messrs Dykes and Gordon, and a variety of double anemones by Mr John Brown. — A Subscriber

REFERENCES

West Newfoundland Horticultural Society. — May 25. Prizes were awarded as follows, viz. :—

Above: Peltin, 1 Malcolm Swain, gardener to Mr. Fairrie, 2 Archibald Brown, gardener, Park, 3 Mr. J. Northwick, nursery and seedman, Early Cabbages, 4 Mr. John Baxter, gardener, 5 James Kirkpatrick, gardener to Mrs. Crooka, Leven, 6 Mr. James Campbell, gardener, George's, Asparagus, 7 Mr. Archibald Brown, 8 John M'Mah, gardener to Lieutenant-General Dalrymple, George's, 9 Peter M'Inroy, gardener to Mrs. M'Inroy, Leven.

The show articles were arranged by the Committee according to their respective excellence, in the following order :—

Double Wallflower, A. Melross, gardener to Sir Michael Shaw Stewart, Ardgowan. Single Wallflower, Edward Brodley, gardener to Andrew Rankin, Esq., Ashburn. These articles were exceedingly beautiful. Single Anemones: 1. Malcolm Service; 2. A. Melross. Rhubarb: 1. A. Melross; 2. Edward Brodley; 3. Charles Miller, gardener to James Watt, Esq. Early Potatoes: 1. John M'Nab; 2. Malcolm Service. These potatoes were of a good size, and reared in the open air. Cos Lettuces, John M'Nab. Bouquet of Flowers: 1. John Borthwick; 2. Archibald Brown; 3. Malcolm Service. Two boxes of articles had also been received, one from Henry Knox, gardener to Jacob Dixon, Esq., and the other from William Knox, gardener to Mrs. Dixon, Dumbarton, which were not exhibited in consequence of their late arrival. Asparagus was one of the articles which the boxes contained, and was as fine as any ever produced at any exhibition, and would undoubtedly have taken the prize. They contained also a quantity of cabbages, potatoes, and lettuces, very fine in quality, with stocks, wallflowers, roses, and other flowers, which beauty could scarcely be rivalled. (*Greenock Advertiser*, May 28.)

STIRLINGSHIRE.

Stirling Horticultural Society.—May 11. The following articles were competed for, and prizes awarded :—

Flowers. Auriculas: 1. Mr. John Christie, Causewayhead; 2. Mr. John Mitchell, gardener to William Murray, Esq., of Polmaise; 3. Mr. Robert Kay, Shiphaugh. Polyanthus: 1. Mr. Ninian Niven, gardener to James Stirling, Esq. of Keir; 2. Mr. George Lightbody, Falkirk; 3. Mr. William Somerville, gardener to John Stirling, Esq., of Kippenross. Hyacinths: 1. Mr. Ninian Niven; 2. Mr. Peter Mackenzie, gardener to Robert Lewis, Esq., of Plean; 3. Mr. James Macfarlane, Stirling. Bulbous Flowers. Best Bouquet: 1. Mr. John M'Innes, gardener to Robert Bruce, Esq., of Kennet; 2. Mr. Ninian Niven; 3. Mr. — Gow, gardener to Count Flahault, Tullyallan Castle. — *Fruit.* Apples: 1. Mr. John M'Innes; 2. Mr. Ninian Niven; 3. Mr. — Gow. — *Culinary Vegetables.* Cucumbers: 1. Mr. John Mitchell; 2. Mr. George Milne, gardener to Robert Stein, Esq., of Kilbagie. Rhubarb: 1. Mr. Hugh Macoll, gardener to James Callender, Esq., of Craigforth; 2. Mr. James Mitchell, gardener to Mrs. Hume of Auchinbowie; 3. Mr. George Milne. Turnips, Mr. John M'Innes (no competition). Cabbage: 1. Mr. William Somerville; 2. Mr. William Moir, gardener to Mrs. Edmond of Comely Bank. Asparagus: 1. Mr. John M'Innes; 2. Mr. Ninian Niven; 3. Mr. David Trotter, gardener to James Johnstone, Esq., of Alva.

Among the different articles exhibited were some beautiful specimens of apples in a state of high preservation, by Major Baird of Park. They were, however, precluded from competition, owing to their having been received too late. Mr. David Trotter, Alva House, exhibited some pears, which were also in a high state of preservation. Mr. Ninian Niven, Keir, in addition to the articles for competition, produced some full-sized early potatoes of two sorts, and a dish of very superior mushrooms. Mr. Nicol Cathie, gardener to the Right Hon. Lord Abercrombie, although not yet a member of the institution, exhibited rhubarb, cucumbers, and mushrooms, which were much admired for their excellence. Besides the flowers nominated for competition, the tables were richly furnished with very fine specimens of bulbous, herbaceous, green-house, and stove plants, &c., by the operative members. The *Magnolia purpurea*, *Azalea indica*, *Glycine sinensis* [*Wistaria Consequana*], cactuses, and ericas, in particular, were very splendid. The Committee were presented with some bottles of very excellent vinegar, produced from gooseberries, by Mr. Dickson, butler to Robert Stein, Esq., of Kilbagie, which was considered to be excellent in point of purity and flavour. The zeal of the members of this association cannot be too highly commended. They some time ago resolved to connect with the institution a library of standard and periodical works on horticulture, and other subjects of a kindred nature, and we are happy to inform our readers that the resolution is meeting with general support. For our own part, we consider this to be a remarkably happy idea, and expect that it will be the means of doing unspeakable service not only to the institution, but also to every individual in the district who happens to have a patch of garden-ground to cultivate. It will gratify and improve the taste of the amateur, and induce many who have a little spare time, to devote it to the delightful and innocent amusement of "rearing plants and flowers." It will extend the taste for reading among operative gardeners, and put them in possession of the theoretical knowledge of the man of science. (*Stirling Advertiser*, May 14.)

Falkirk Horticultural Society.—April 27. The successful competitors for the prizes were as follows, viz. :—

Flowers. Auriculas: 1. Mr. Henry Masterton, Falkirk; 2. Mr. George Lightbody, Falkirk; 3. Alexander Forrester, gardener to William Falconer, Esq., Carlisle. Polyanthus: 1. Alexander Forrester, gardener to William Falconer, Esq., Carlisle; 2. Mr. George Lightbody, Falkirk; 3. Mr. Henry Masterton, Falkirk. — *Fruit.* Apples: 1. Robert Hardie, gardener to William Forbes, Esq., Callendar; 2. David Dow, gardener to J. Logan, Esq., Clarkston; 3. James Sinclair, gardener to Thomas Spottiswood, Esq., Dunipace. — *Culinary Vegetables.* Broccoli: 1. James Cruikshanks, gardener to Cumming Bruce, Esq., Kinnaid; 2. Keith Buchanan, gardener to Sir M. Bruce, Stenhouse; 3. David Dow, gardener to J. Logan, Esq., Clarkston. Carrots: 1. James Cruikshanks, gardener to Cumming Bruce, Esq., Kinnaid; 2. Robert Hardie, gardener to William Forbes, Esq., Callendar. Leeks: Alexander Forrester, gardener to William Falconer, Esq., Carlisle; 2. Alexander Berrie, gardener to Thomas Learmouth, Esq., Lawrence Park; 3. James Cruikshanks, gardener to J. Logan, Esq., Clarkston.

The flowers and vegetables brought forward bore the most ample testimony to the skill and successful industry of the competitors; and seldom has the Society been favoured with such a display from its members. They met with the warmest approbation of the gentlemen present, and gave them reason to think that this part of the country was not behind in the cultivation of fine flowers. The auriculas and polyanthus were particularly deserving of notice, as any one at all acquainted with the subject may satisfy himself by referring to the annexed list of names, which it is only necessary to mention. First prize Auricula, among others, contained Lee's Colonel Taylor and Howard's Lord Nelson (green-edged), Kenyon's Ringleader and Taylor's Ploughboy (grey-edged), Lee's Bright Venus and Hughes's Pillar of Beauty (white-edged). Second prize Auricula, Hood's Lord Lascelles and N. Smith's Emperor Alexander (green-edged), Kenyon's Ringleader and Thomson's Bang-up (grey-edged), Taylor's Glory and Scholfield's Maid of the Mill (white-edged). First prize Polyanthus: Coxe's Prince Regent, Fletcher's Defiance, Park's

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Lord Nelson, Billington's Beauty of Over, Lombard's Highlander, and Thomson's Princess of Wales. Second prize Polyanthus: Pearson's Alexander, Turner's Bonaparte, Fletcher's Defiance, Coxe's Prince Regent, Scott's Seedling, and Yorkshire Regent. (*Stirling Advertiser*, May 14.)

FIFESHIRE

Cupar Horticultural Society. — April 28. The prizes were awarded as follows:—

Flowers. Auriculas: 1. John Paterson, gardener to John Dalzell, Esq., of Lingo; 2. Thomas Greig, gardener to the Earl of Leven and Melville; 3. James Anderson, gardener to Colonel Don of Springfield. Self Auriculas: 1. Alexander Paterson, gardener to George M'Gill, Esq., of Kemback; 2. James Anderson. Polyanthus: 1. Alexander Paterson; 2. James Anderson; 3. Thomas Greig. Double Hyacinths, Thomas Greig. Polyanthus Narcissus, Thomas Greig. Single Anemones: 1. James Anderson; 2. Thomas Greig; 3. John Paterson. Spring Flowers, Thomas Greig. Exotic Plants, James Anderson. — **Culinary Vegetables.** Broccoli: 1. Thomas Greig; 2. John Paterson. Asparagus: 1. James Bouchard, gardener to George Campbell, Esq., of Edenwood; 2. John Paterson; 3. Alexander Paterson. Scotch Leeks: 1. Thomas Greig; 2. Alexander Paterson; 3. John Paterson.

Some fine specimens of early forced strawberries, of the Rose and Keen's seedling kinds, were produced to the Meeting by Mr. Greig, gardener to the Earl of Leven. They presented an uncommonly inviting appearance, and the plants seemed to be as richly clothed with flowers and fruit as we have seen them in the best situations in the month of June. Mr. Greig also exhibited a fine bundle of succory, a delicate salad, which is too little grown in this neighbourhood. Mr. Anderson, gardener to Colonel Don, exhibited a fine collection of exotics, among which we observed beautiful plants of the following species:—*Erica cerinthoides*, coldrains, *lemnoides*, *odora-rdsea*, and *grandindsa*; *Lechenalitia formdca*; *Epacris grandiflora*; *Gardenia florida*, *Azalea indica*, double purple and single white. (*Fife Herald*, April 29.)

PERTHSHIRE

Dundee Horticultural Society. — May 3. The successful competitors were as follows; viz. —

Mr. James Smith, gardener, Ellangowan, for the best auriculas, and Mr. John Hampton, gardener, Crescent House, for the second; Mr. J. Smith, for the best self auriculas, and Mr. J. Hampton, for the second; Mr. J. Smith, for the best seedling auriculas, second polyanthuses, and best hyacinths; Mr. Thomas Spalding, gardener, Arthurstone, for the best polyanthuses; Mr. J. Stewart, Dudhope nursery, for the best seedling polyanthus; Mr. J. Hampton, for the best bouquet of flowers, and Mr. J. Kidd, gardener, Rossie Priory, for the second ditto. Mr. J. Kidd for the best cucumbers; Mr. J. Kettle, gardener, Glendoig, for the second ditto, and best purple broccoli, and Mr. Radley of the Asylum, for the best white broccoli; Mr. J. Walker, gardener, Airly Castle, for the best sea-kale; Mr. J. Hampton, for the best lettuce and best leeks; Mr. J. Dick, gardener, Ballindean, for the second lettuce, and Mr. J. Kettle, for the second leeks and best spinach; Mr. Thomas Spalding, for the best Brussels sprouts and best early cabbage: Mr. J. Hampton for the second early cabbage, and Mr. J. Dick for the best mushrooms; Mr. W. Brow, gardener, Meigle House, for the best asparagus; Mr. A. Smith, gardener, Cunnoquhie, for the second; and Mr. T. Spalding, for the best preserved apples; Mr. J. Kettle, for the second preserved and best variety of apples; Mr. J. Dick, for the second variety of apples and second variety of vegetables; and Mr. D. Mitchell, gardener, Carolina Port, for the best variety of vegetables and best onions. A very fine plant of *Correa speciosa* was exhibited from Crescent, and a beautiful plant of the *Sempervivum ardreum* in full flower, from Carolina Port; a very pretty variety of rainbow self auriculas, violets, and flowers of white chrysanthemum, from Arthurstone; some pears, in apparently good preservation, from Ballindean, and some early potatoes, of tolerable size, from Glendoig and Ballindean. Some very excellent Spring spinach and asparagus were received three days after the Meeting, from Mr. James Kellock, gardener to W. Fergus, Esq., Kirkcaldy, which, had they come forward in time, had a good chance for prizes. (*Dundee Courier*, May 11.)

ABERDEENSHIRE

Aberdeenshire Horticultural Society. — May 4. The following is the order of merit:—

Flowers. Stage Auriculas: 1. and 2. D. Gairns, Glenbervie House; 3. Mr. J. L. Massie. Seedling Auriculas: 1. Mr. J. Forbes, Broadford; 2. Mr. A. Diack. Polyanthuses: 1. Mr. W. Davidson, jun.; 2. Mr. Massie; 3. Captain Clyne. Seedling Polyanthuses: 1. and 2. Mr. Massie; 3. D. Gairns. Hyacinths: 1. D. Gairns; 2. Captain Anderson. — **Fruit.** Dessert Apples: 1. J. Brodie, Denmore; 2. A. Brown, Heathcot; 3. William Chalmers, Loch-head; 4. J. Collie, Forglen House. Twenty-five Stalks Rhubarb: 1. William Anderson; 2. P. Archibald; 3. Charles Berry, Ury. Three Bottles Home-made Wine: 1. (Gooseberry Champagne) Mrs. Young, Cornhill; 2. (Black Currant) Mrs. Crombie, Phedo; 3. (Strawberry) Mrs. Gordon, Kincardine; 4. (various Fruits) Al. Diack. — **Culinary Vegetables.** Mushrooms, William Anderson, gardener, Cornhill. Asparagus: 1. J. Alexander, Murtle, and D. Cadenhead, New Bridge (equal in merit); 2. and 3. George Cardno, Woodside. Broccoli: 1. William Gallow, Scotstown; 2. W. Lawson, Devanha House; 3. J. Cobban, Arbuthnot House. Sea-kale: 1. George Cardno; 2. P. Archibald, Park; 3. William Smith, Grandholm Cottage. Cucumbers: 1. (twins, 11 in. long), 2. (13 in.), and 3. (14 in.), William Anderson.

Extra-Prize. Mr. W. Davidson, jun., a large collection of beautiful Green-house Plants, in full flower.

The Society's large silver medal was awarded to D. Gairns, gardener to J. M. Nicholson, Esq., of Glenbervie, for the hyacinths, being the best articles at the Show. The Society's small silver medals were awarded to all the other first articles, as well as to Mr. W. Davidson, for the extra-prize: there were no second prizes given upon this occasion. The display of auriculas, polyanthuses, and hyacinths, was very fine. The specimens of apples were numerous and uncommonly good; the vegetables were excellent; and the wines delicious. (*Aberdeen Journal*, May 5.)

THE
GARDENER'S MAGAZINE,
OCTOBER, 1830.

PART I.
ORIGINAL CORRESPONDENCE.

ART. I. *Notes and Reflections made during a Tour through Part of France and Germany, in the Autumn of the Year 1828.* By the CONDUCTOR.

(Continued from p. 392.)

THE *public gardens of recreation* in and around Paris are numerous, and they are all of them more conspicuously, and perhaps more truly, scenes of enjoyment than the public gardens of England; because the French are more gay and social in their enjoyments than the English. The Garden of the Tuilleries, once called royal, is, taking it altogether, perhaps the most interesting public garden in the world. We will not enter either on a history or a description of this garden; and, indeed, as we have other important business to transact on this bright morning of September 14th, we are determined that the present article shall be short. Besides, we feel that it would be a species of profanation, even in a Magazine of Gardening, to say much on any subject in which Paris is concerned, foreign from the glorious events which took place on the 27th, 28th, and 29th of July last; events which, sanguine as we are as to the destiny of the human race, and great as have of late been our expectations from the French (see pp. 474. and 514.), have produced results of which “we dare not have dreamed.”* When once society is freed from the trammels of antiquated institutions, the rapidity with which

* See *To the Tricolor*, a poem, by T. Roscoe, Esq.; and the letters of O. P. Q. in the *Morning Chronicle*, a newspaper which has been justly designated by the French as the dignity and ornament of the British press.

the natural rights of man will gain the ascendancy can only be compared to the rapid growth of a tree, which, after having been for many years clipped, is at last permitted to shoot forth in all the character and beauty of truth and nature; when its widely-spreading and vigorous branches soon burst through the limits to which the tree had been previously confined by the tonsor, and a formal and insipid piece of verdure becomes in time one of the noblest subjects of the forest.

The Gardens of the Tuilleries are invaluable from their situation in the centre of Paris, and from their being open at all times to all the world. They have open airy walks for winter, and shady walks and deep yet airy groves for summer; flower-borders, in which a constant succession of showy flowering plants is kept up; lawn, kept green by daily watering; fountains, which, however, do not play so frequently or so magnificently as they should; and a number of very beautiful statues. During the summer, the principal walks are bordered by lofty orange trees in tubs: and what is singular respecting these trees is, that the blossom, being a perquisite of the gardener, is always plucked off before they are set out, and sold, for his benefit, to the orange-flower-water manufacturers; so that the trees are not half so ornamental as they would be if covered with fruit and blossom.* As to the delicious perfume which these blossoms would afford, we could write a volume upon the subject. Whoever has walked in the orange orchards at Nervi, knows that the quantity of orange trees distributed in the Gardens of the Tuilleries, if allowed to retain and expand their blossoms, would scent not only the air of the gardens but of half Paris. If there are any who deny this, we ask them to account for the orange fragrance of the air for miles around Genoa and Naples, both by sea and land. If all the public gardens in Paris were moderately stocked with orange trees, and a few distributed along the Boulevards (and the Parisian populace are sufficiently cultivated not to touch either the blossoms or the fruit of trees thus confided to their care for their advantage), the entire atmosphere would be that of the Island of St.

* Sprigs of orange trees in blossom, and wreaths of the same, are sold in the markets at Paris throughout the year (the trees being forced in the winter season), to be worn at marriages; the bride being crowned with a wreath, and the bouquets being distributed amongst her attendants. In the evening the wreath is divided into small pieces, and eagerly sought for by the young female friends of the bride, who believe it to possess the same qualities as are attributed to pieces of the bride-cake in England. We have seen sprigs of orange trees worn at marriages in this country; and we rejoice to observe the striking manner in which the customs of two nations, so formed to be united as England and France, are beginning to amalgamate.
— *Note by J. L. Cobham. Sept. 15.*

Michael: nor would this perfuming *en masse* surpass other improvements of the age; lighting by gas, for example. By the judicious distribution of orange trees, and of other odoriferous flowers, shrubs, and plants, or even by mignonette alone, the air of any city might be rendered as odoriferous as that of a garden. When the many have once conquered from the few what is necessary and convenient, they will then attempt what is agreeable and refined; and, with the knowledge of the wonderful resources of nature and art, requisite to give them the sovereignty of society, they will succeed.

But, to return to the orange trees at the Tuilleries, or, to speak our minds freely, all those kept in tubs in the open garden every where, we should greatly prefer having the tubs or boxes sunk in the borders, and covered and disguised in such a way as would convey the idea that the trees were growing in the natural soil. Nothing could be easier to execute; and we recommend this, and also the subject of plucking off the blossoms, to the proper authorities. We are aware of the allegation, that suffering the fruit to come to maturity would weaken the tree, &c. &c.; but it is the gardener's business to supply the tree with strength; and we know he can supply it when his interest does not interfere. *

(To be continued.)

ART. II. *Notice of the Gardens of the Hon. and Rev. W. Herbert at Spofforth.* By N. H. S.

AT Spofforth, a mean-looking straggling village, about four miles south of Harrogate, is the residence of that eminent botanist the Hon. and Rev. William Herbert, brother to the present Earl of Caernarvon. Mr. Herbert is a gentleman of good private fortune; and the rectory of Spofforth is said to bring him in an income of 2500*l.* per annum. As a botanist Mr. Herbert is well known: he is also a most accomplished scholar, an eloquent preacher, and a poet. (See his *Helga*, 2 vols.) The rectory house has nothing about it to deserve either encomium or disparagement. The gardens nearly

* Since writing the above, we have seen, in the *Times* (Sept. 24.), an intention expressed of pulling down the Tuilleries, to rebuild a palace for the use of the three princes. We should not be sorry to see that part of the Tuilleries pulled down which is said to be in a state of decay, and rebuilt as a continuation of the National Galleries of Sculpture and Painting; but most deeply should we regret to hear of a palace for a prince being built in France after what the French have done. The days for erecting palaces for individual kings, we trust, are gone never to return, not only in France but throughout Europe: a government palace is a different thing.

surround it, and are rich in rhodendrons, azaleas, kalmias, &c., together with the most choice irises, African gladioli, and hybrids of the greatest variety and beauty, which may be sought for in vain elsewhere. In front of the stove and green-house, the borders are filled with the most choice bulbs, as crinums, amaryllis, pancratiums, cyrtanthus, cannas, &c., which bloom in such perfection as few green-houses, or even hot-houses, can boast. Here are also beautiful rock plants and many choice aquatics, with gold fishes, in a small pond. The noble curvilinear conservatory (which opens into a drawing-room) seems to be admirably managed, if we may judge from the luxuriance and size of the Australian and Cape acacias, liparias, beaufortias, melaleucas, leucadendrons, and other choice shrubs, with which it is planted: along the front glasses is a raised border, 2 to 3 ft. broad, in which are planted many splendid creepers and climbers, as platylobiums, glycines, kennedias, and choice calceolarias, salpiglossis, heaths, elichrysums, crotolarias, &c. &c. The stove is entirely a botanical one, and is literally crammed with rare and curious plants, including the beautiful ixoras, bignonias, hibiscus, passifloras; and at each end are a number of Orchideæ, parasites, epiphytes, &c., such as Dendròbium, Epidéndron, &c., some growing in baskets, some in pots, and others in the stumps of old trees; many of these are not to be found in any other place in England. The green-house joins the stove: in it are numerous camellias of extraordinary size and beauty, and many hybrids raised from seed by Mr. Herbert; and the tribe of ixias, gladioli, &c., on the raised border is endless. The bulb-house communicates with the green-house, and is so full of every variety of exotic bulbs that it is not easy to pass them. In this house are also very fine plants of *Strelítzia*, and *Gloriosa supérba*; several plants of that singular genus *Man-tisia saltatòria*, or opera girls; and on the rafters some beautiful and rare climbing plants. Beyond the bulb-house is the heathery, in which many of the better varieties of those handsome plants, and some hybrids, &c., are found, as well as a numerous assemblage of mesembryanthema, cacti, pelargoniums, &c.

The borders and beds in the garden have every thing rare and curious, from the superb magnolia to the Neapolitan violet.

The site of the kitchen-garden is not good; nevertheless it appears to be highly productive. There is a small flued pit, in which a few grapes, pines, and melons are grown. On the whole, Mr. Herbert's collection cannot fail to please any one fond of plants; but I regret one thing that truth obliges me

to mention: *the garden is not easy of access for those who find themselves without an introduction.* Mr. Herbert is said to be a very amiable man, enthusiastically attached to his garden, in which he spends much time: if, therefore, he allowed his collection to be shown to all callers, he would in the summer months be every day annoyed with company from Harrogate, who, having little to do, are constantly going from one show-place to another; some from a real love of science, and others to drive away *ennui*, which the tedium of a watering-place very commonly produces.

Newton-Kyme, June 19. 1830.

N. H. I.

ART. III. *Some Account of the Progress of an Experiment going on in Monmouthshire, for bettering the Condition of the Labouring Classes.* By JOHN H. MOGGRIDGE, Esq.

Sir,

ALTHOUGH considerable time has elapsed since my last communication to you on the subject of my experiment for bettering the condition of the labouring classes (Vol. III. p. 167.), yet have I not forgotten my promise of occasionally notifying its progress to you. It has now nearly two years and a half of experience more to boast of than when I transmitted you the last particulars of its state and circumstances; and although these have been (and must be still more, I fear) very injuriously affected by the distress which generally, if not universally, pervades the country, yet has nothing occurred to invalidate the principle on which the experiment was founded, or even to occasion doubt as to its continued local success. On the contrary, the effects of the pressure of the times, and of the impolitic attempts which have been made, with partial success, to fasten direct local taxation on the laudable exertions of humble industry to set itself above want in sickness and old age, and to reassume a portion at least of that independence of spirit which their forefathers possessed, have only added other proofs in support of the fact, — that the labouring classes in this country have been degraded, impoverished, and demoralised, much more by the baneful system of misgovernment to which the country has been long subjected, than to any inherent vice in their own constitution, or any personal fault of their own. The partial imposition of poor-rates, church-rates, and highway-rates, though fortunately defeated in the intention of its being made general, and confined to that which the strict letter of the law unhap-

pily admits of being enforced, has driven away a few adventurers, and alarmed, disgusted, and in some degree paralysed all; so that the prospect of rescuing many more from the jaws of poverty, and from the fangs of oppression and want, is not at present very encouraging, although the number of inhabitants in the three villages mentioned in my last has, since the date of that account, increased to between two and three thousand. At present, from the conjoint operation of local taxation, and the necessary effects of the present depressed state of every branch of British industry, the population in these experimental villages is on the decrease rather than otherwise. How much this is to be regretted by every real friend of his country, the following short statements, showing in part, but materially, the altered condition and consequent feelings of the poor, will unanswerably testify. Early in the year 1827, an unfortunate difference respecting wages took place between the proprietors of the Monmouthshire collieries and their workmen; and a comparatively few vagabonds became the terror of the country for several weeks, by means of nightly alarms, and depredations committed on such of their fellow-workmen as were willing to work on their 'masters' terms. Then it was that the difference was conspicuously shown between those who had nothing they could call their own, and those who were conscious that, in their houses and gardens more particularly, they had something to lose; between those who had been made half brutes by having been subjected to contumely, contempt, and inhumanity, and those who had been treated with the consideration and kindness due from all human creatures one to the other. Whilst the unmarried colliers rambled into other mining districts in search of work; and whilst the great mass of the married men scoured the country for fifteen miles round in parties of from ten to twenty in each, with wallets over their shoulders, and bludgeons in their hands, levying contributions in victuals and clothes for the support of their families, the Blackwood villagers, who had gardens, turned their attention to *them*, and subsisted themselves out of them and of the resources at their command: and when it became necessary to swear in a considerable number of special constables to aid in preserving the peace of the country, and for the protection of property, none were found more ready, none more zealous, none more faithful, none more effective, than the cottage freeholders of Blackwood.* Again, in the

* In December, 1828, sixty of these villagers formed themselves into *The Blackwood Society for Free Enquiry*. In the address delivered at the

very spot which, as to cultivation, had been a waste a few years before, has sprung up gardens producing all the varieties

first meeting, by Mr. Moggridge, the great object of the Society is stated to be, "to obtain knowledge by means of free enquiry. Some may know something worth imparting which others do not know, but may learn; so that thus the knowledge of each and every member may in time become the property of all. By discussion also, and attending to select readings, much knowledge will be obtained which none of the members may know any thing of at present; and attentive consideration of and thinking upon what you hear, will be sure to make you both wiser and better. The plan and rules of the Society have been repeatedly read, and finally approved: they are simple and easy to be understood, and calculated to do what is to be done in the cheapest, most regular, and most effectual manner. Amongst the leading subjects which will probably be brought forward are geology, or the knowledge of the structure of the earth; mineralogy, or a knowledge of minerals: both subjects particularly deserving the attention of persons who live in this great mining country, and who are in the habit of going under ground. Mechanics, or the knowledge and use of machines, by the help of which one man may do the work of many; a subject also very important to miners and manufacturers. I mentioned just now the name of the greatest inventor of machines in ancient times, Archimedes: he was a native of that part of the world in which a cruel war has been carried on by the Turks against the Greeks. Here is a model of his screw-pump. See! in working simply by the winch it raises the water from the bottom of the tin can to the top, through a pipe which I have had twisted round the outside of a cylinder, instead of its being a screw in the inside, in order that you may see its mode of working more clearly. It is used for pumping water out of canals and reservoirs, and for other purposes, and might be used to advantage in your mines. The arts of life, or a knowledge of the different trades of the industrious, will be another subject for your attention; and domestic economy, or the means of enabling every poor man's family to live better and more cheaply, by applying things to the best purposes in the best way, and by teaching the use of different articles of food, of which many are at present ignorant, or know but little about. A garden all of you begin to value as one of your best friends: my gardener will give you a lesson upon gardening; so that you may, if you will, have vegetables of all sorts, and common fruits in plenty, and know how to raise your own plants, and sow your own seeds. I shall mention only two other subjects, but they are of the greatest importance, viz. politics and religion. I am one of those who think it but just that those who pay for the support, and contribute to the expenses, of government (and all pay more or less, directly or indirectly), should occasionally turn their attention to the measures and principles of government. It is only bad governments that do not like to render an account of their proceedings and expenditure to the people, like as bad servants fear to be called to an account by their master; temperate and constitutional discussion on this subject is the right of all people, and can do no harm to any whose conduct is upright and honest. Above all, and as being the most important, and your enquiries being, as I understand, the most directed thereto, is the subject of religion; in comparison with this all other subjects become of little consequence."

We should be happy to hear of societies of this sort being formed in every village of the kingdom; nothing but the control of opinion will save this country from a crisis. It is in the nature of things, that the political sufferings of all will render all politicians. — *Cond.*

of the most useful vegetables, and many others which, though desirable, are not necessary; currants and gooseberries, raspberries, strawberries, apples, and the rhubarb for tarts; and (though more rarely) single plants and beds of flowers: so that the prizes for "the best cultivated villager's garden in the hills of Glamorgan and Monmouthshire," and for "the best basket of sorted vegetables," as well as for "the finest apples," and for "new or rare sorts of apples," all fell to the lot of the Blackwood villagers, at two successive shows of the Horticultural Society in the year 1829, as well as the prize for "the most beautiful flower in bloom." That these are striking indications of physical and moral improvement, who will venture to disbelieve? and who that is a real friend to the peace and tranquillity, the reputation and happiness of his country, but must wish them to become, as they EVEN YET might be, UNIVERSAL? In the present state of the country little progress in the true cottage system can be expected in England, notwithstanding various applications for practical information thereon have been made, and some of them from persons of rank and extensive influence. In Ireland, on the contrary, the labouring poor are not subjected to the fatal effects of that taxation which in England renders the circumstances of the poor all but desperate; if the curse of tithes could be previously removed as affecting improvements, the cottage system on the most liberal scale might, under the direction of judicious and experienced persons, be rendered a real blessing to the country; as the editor of the *Irish Farmer's Journal* for January 1827 justly observes. The hints for farther improvement in the circumstances of the labouring poor, afforded by the very interesting particulars, given in the *Gardener's Magazine*, of your late Continental tour, I cherish with fondness, but, alas! without the hope of seeing many of them adopted in my time.

JOHN H. MOGGRIDGE.

Woodfield, Monmouthshire, March 5. 1830.

ART. IV. *On the Subject of an Experiment made for bettering the Condition of the Labouring Classes.* By JOHN H. MOGGRIDGE, Esq.

Sir,

FARTHER information as to the progress of my experiment for bettering the condition of the labouring classes may not be unacceptable to certain of your readers. It is now some length of time since the last account appeared; and although

the additional incidents are few, and by no means so satisfactory as heretofore, certain of them furnish matter of much though mournful interest to the political economist, and to the friends of the improvement, happiness, and respectability of the working poor.

Except in one of the villages where local circumstances have fostered improvement, very few additional houses have been erected by *cottagers*; who, partaking of late largely in the distress of the times, have generally been disabled from making any exertion to extricate themselves from the degraded and dependent state into which they have been so deeply plunged, or from availing themselves of the proffered assistance for that purpose. Yet, up to the beginning of the last winter, the progressive improvement in the appearance of many dwellings previously built, as well as of their inmates, was perceptible and gratifying; but, above all, the superior cultivation and increased comforts derived from their gardens strongly denoted greater ease of circumstances, as well as materially contributed thereto. A more striking proof of what the exertions of the labouring classes, duly encouraged, instead of unnaturally depressed, would effect in this way, can hardly be furnished, than that which arises out of the fact, that, at all the Horticultural Society meetings held during the past year, the cottagers of the earliest-established village, heretofore described, carried away the prizes offered for the productions of cottage gardens in the hills of either of the two counties of Monmouth and Glamorgan. The depression of trade, which has within a year past been grievously felt in this part of the country, and the imposition of local taxes, which the friends of the struggling poor have been unable to prevent, have operated a most distressing change, affording another and striking proof of the gross impolicy as well as injustice of a state of society which raises the price of provisions beyond the reach of the unassisted poor; at the same time that, from the same cause (enormity of taxation for church, king, and poor), exertions directed to the preservation of a spirit of independence are palsied, and the attainment of self-maintenance and self-respect rendered a hopeless task. The consequences of this deplorable change in the state of affairs are too visible and too lamentable to escape notice; and, in particular, I am sorry to have to mention that many cottage freeholds have been mortgaged, and others sold; and that a considerable number of the most industrious, intelligent, and striving labourers have, in the course of the summer, emigrated to the United States of America; for which land of liberty, and freedom from tithes and other oppressive taxation, many more are eager to

embark. The necessity which exists, and which seems likely to continue, for selling the produce of our mines and manufactories at very reduced prices, if sold at all, operating, and necessarily so, great reduction in the rate of wages; the imposition of direct taxes, and the probability of the curse of taxation being farther extended so as to include the cottages of the poorest of the poor, as contemplated in a bill introduced into parliament in the course of the last session by Mr. Slaney, one of the members for Shrewsbury, render, I fear, all prospect of retrievement but faint and feeble, till that change takes place in our national affairs which error and misrule have been long preparing.

I am, Sir, &c.

Woodfield, August 28.

JOHN H. MOGGRIDGE.

ART. V. *Observations chiefly relating to the Agricultural and Horticultural Labourers in France and England.* By R. BAKEWELL, Esq.

Sir,

I HAVE perused with unmixed satisfaction your notes and reflections on the country round Paris, in the last Number of the Gardener's Magazine (p. 1.): though much has been written and published on the French capital, I have met with no other account which conveys so correct and original a description of what is peculiar and distinctive in the characters and appearance of the environs of Paris, compared with those of London. Travellers generally confine their observations too much to the higher orders of society, whose manners in all civilised countries are so nearly reduced to the same form, that they may, as Rousseau observes, be regarded as puppets fixed to the same board, and moved by the same wire. "The simple annals of the labouring poor," who compose the great mass of society, deserve the chief attention of the traveller, at least of him who would really benefit the world by his ramblings. It has doubtless occurred to you, that many customs of the people on the Continent, which appeared at first as absurd, for no better reason than their variance from those in Great Britain, were, on a more complete knowledge of them, found to be appropriate to the climate and circumstances of the country. I would therefore ask you, in the spirit of enquiry, and not of criticism, whether the "intolerably high roofs" of which you complain, as disfiguring the houses in France, do not possess substantial advantages which more than compensate for their appearance? In the first place, the empty space under the roof forms the *grenier*, and is appropriated to keep

the winter stock of wood for fuel dry; but it performs more important services. I appeal to the thousands of persons residing in the flat low-roofed houses round London, whether, in the years 1826 and 1827 (which had true French summers), they did not find their upper sleeping-rooms, from being so close to the roof, as hot as bakers' ovens, and whether they could by any possible means keep them cool. In winter, owing to the same cause, the rooms are extremely cold, and subject to frequent inundations from the sudden thawing of the snow which lodges upon the roof. These inconveniences are effectually prevented by the high roofs of the French houses, which, by interposing a great body of air between the tiles and the upper ceiling, tend to equalise the temperature, while the form of the roof prevents the snow from lodging in thick masses. [A sufficient argument; and we now see a beauty in high roofs which we did not see before.]

The following case strongly exemplifies the folly of condemning practices because they are at variance with those in our own country:—A very intelligent friend of mine observed in the neighbourhood of Tours a large public work (I believe it was an embankment), which appeared to proceed very slowly, compared with the rapid execution of such works in England. He expressed his surprise to the overlooker, and received the following answer:—“I admit, Sir, that in England you would have completed the work in as many months as it will take us years to finish, but I believe that the expense would have been greater in the same ratio; it is not, however, to save expense that we conduct the work slowly; we have a higher object in view, the benefit of the labouring classes in the neighbourhood. There are certain times of the year when they have not sufficient employment; at such times any man may come here and work as long as he pleases, for one hour, two hours, or more, and he is paid in exact proportion to the quantity of work he performs. The barrows are all of the same size, and he receives for the number of barrowfuls of earth that he wheels to a certain place, a clerk noting down each time that he passes. Whenever he pleases he demands his money, and returns home. The wages we allow are something less than the common rate of labour, but are sufficient for his support; and in this way we have rendered essential service to the labouring poor for several years.” Many a John Bull, who thinks himself a political economist, would have chuckled with exultation at the superior cleverness and quickness of the English, when he first learned the slow progress of such a work, and would never have stopped to discover the practical good sense by which it was directed. In

regarding France as an agricultural and horticultural country, it is impossible to overlook the political revolution which has divided the landed property into small masses, and which, by abolishing the right of primogeniture, tends continually to subdivide every estate in France. It is easy to conceive, in theory, that this subdivision might be carried so far as to prejudice the interests of agriculture: but I do not believe that it has had or will have this effect, for the proprietors of very small portions of land will almost always sell them if there be no house upon the property. A more equal division of land, by increasing the number of proprietors, gives security to property, as it increases the number of those deeply interested in its defence. The system applauded by some economists, of breaking up small farms, and consolidating them into large ones, has not (as it has often been contended) the necessary effect of increasing produce, but it sends the greater part of the population of whole villages to the workhouse.

In Flanders, where the farms do not on the average exceed from eight to eighteen acres, we find a population which, taken per square mile, is double that of England; and a greater quantity of food is said to be produced there than from any country of the same size in Europe: the people are also living in a state of great comparative comfort. The natural fertility of Flanders is not greater than that of England.

Another advantage resulting from the division of property will be, that the possessors will cease to be very eager to turn soldiers, and hazard their lives for objects in which they have no interest whatever; and if in this way the military ardour of the French people should abate, it will be better both for themselves and their neighbours. When the right of primogeniture underwent a fresh examination by the French legislature four years since, and the law which abolished it was reconfirmed, an English senator, whose views are in general liberal and just, surprised his friends by declaring in parliament that the French legislators were insane; because the abolition of the right of primogeniture would, by the division of property, increase the number of rural consumers of produce, and be the ruin of France. In proof of this, he stated that the rural population of France at present consumed one half of the agricultural produce, whereas in England the rural population consumed less than one third.* I confess that I

* I am not certain that the relative proportion of food consumed by the rural population of France and England is precisely what was stated, not having the papers to refer to: the principle, however, remains the same. I published some remarks on this extraordinary speech in the *Times* newspaper, a few days after its delivery.

cannot understand why a nation may not be as great and as happy when a large portion of its population consume the produce under a clear atmosphere, instead of being cooped up in large towns, factories, and garrets. Be this as it may, I beg the attention of your readers to the extraordinary fact, that the worthy senator who pronounced the French legislators to be insane, and stated so dogmatically what portion of the food ought to be consumed by the rural population, entirely overlooked the important circumstance, that France is a wine country, and employs some millions of the country people in the cultivation of the grape; and that the total yearly value of the wines in France exceeds twenty-five millions sterling, an amount greater than that of any three manufactures of English national produce, such as wool and iron. Vineyards require twenty times more hands per acre than what are wanted in pasturage and tillage farms; besides this, a great number of workmen are required for cooperage and making glass bottles. Wine-making, though performed by the rural population, is in every respect as much entitled to be regarded as a manufacture as that of wool, of flax, or of iron.

If the vine cultivators consume a large portion of the agricultural produce in their neighbourhood, do they not confer as great a benefit on their country in return as the consumers in Manchester and Sheffield do on England, a large amount of French wines being sold for exportation?

The above is a proof of the facility with which Englishmen too often decide on what foreign nations ought to do for their own happiness, without possessing a knowledge of all the circumstances which alone could enable them to judge correctly.

As closely connected with the subject it may be proper to state, — the fact is fully ascertained, that the average duration of human life in France has been greatly prolonged since the revolution, which is mainly attributed to a large portion of the people being enabled, by the more equal distribution of the land, to live in a state of greater comfort than formerly.

The quantity of agricultural produce consumed in the country may be less in England than it was formerly; yet no one can deny that the state of the agricultural population has greatly and alarmingly deteriorated, and that crimes and pauperism have increased to an enormous extent. The solid strength and prosperity of a nation ought not to be measured by the greatness of its capital in the hands of a few monopolists, or by the quantity of manufactured or agricultural produce which it can export, but by the general comfort enjoyed, and by the physical and moral condition of its inhabitants. I was informed by a clergyman, who has been forty years the

resident rector of a large agricultural parish in Gloucestershire, that, when he entered upon his rectory, there were forty-five small farmers in the parish, who brought up their families respectably in habits of industry; and their children, when they left home, made excellent domestic and agricultural servants. At that time there were only a very few paupers in the whole parish: at present, all the small farms have been consolidated into four large farms; and what is the consequence? — the parish teems with miserable paupers, and the character of the inhabitants is entirely changed for the worse. This is too general a description of English agricultural parishes. It is true, the landlords may at first increase their income, and lessen the expense of building repairs by this system; but if the poor-rates devour a large portion of their rents, and their property is exposed to the ravages of a starving and demoralised people, they will find that they have not gained much by the extinction of small farms. The present state of the agricultural poor in this country is a subject of the most momentous import; and any information respecting the condition of the same classes on the Continent cannot be without its use, as it may tend to elucidate the causes of present distress, and suggest some hints for amelioration. This is the best apology I can offer for sending you the above very desultory observations: they were elicited by the vivid recollections of the Continent which your admirable description of the environs of Paris brought fresh to my mind. Before I conclude, allow me to propose one question. Great Britain, or rather our ministers and parliaments, have expended not less than a thousand million pounds sterling to restore the monarchical and paternal government of the Bourbons*: now, I very much doubt whether any minister or parliament could be found, who could by any means be induced to vote one fifth part of the sum, or two hundred millions, for any measure to benefit the condition of the English people, however great the good it would confer on them. If this be so (and few or none will deny it), I say, if this be the fact, does it not prove that we love our neighbours five times more than we love ourselves? Yet, notwithstanding this surpassing kindness towards them, whether it arise from a defect in the organ of gratitude, or from some mental idiosyncrasy, I never met with a Frenchman, of any class or party, who felt thankful for what we had done, or who did not seem to rejoice at the

* The total expense of the last war exceeds the sum here stated; for, besides the addition which it made to the national debt, all the supplies were raised (without law) by the income tax for a considerable number of years.

difficulties into which we were plunged by interfering in their concerns. Now, the question I would ask you, Sir, is this, Have you been more fortunate in discovering the national gratitude of Frenchmen? Nor is the question foreign to our subject; for, if we find that we have burdened ourselves with an intolerable load of taxation (the main cause of our present distress) in order to settle the government of France, and have, notwithstanding, failed in exciting any kind will thereby, would it not be prudent to change our system entirely, and to dismiss all our expensive military establishments, to confine ourselves to a strictly defensive plan for the future, and to leave other nations to choose what form of government they may like best? Among the expensive military establishments that might be dismissed with advantage are those in most of our foreign possessions; as it might be proved that they have cost more to conquer and maintain than the total amount of all the extra-profit we derive from their commerce. France, deprived of nearly all her foreign possessions, has within herself the elements of mighty power; and is, I conceive, much stronger than if her population were taxed to maintain establishments which possess little utility beside that of providing situations for the younger sons of the aristocracy.

I am, Sir, yours, &c.

Hampstead, March 2. 1830.

R. BAKEWELL.

ART. VI. *On the Management of the Timber Tree Plantations at West Dean, in Sussex.* By Mr. JOHN BOWERS, Gardener and Planter there.

Sir,

WHEN you visited the West Dean Gardens, you appeared much pleased with the thriving appearance of the young plantations. As I attribute their luxuriance in a great degree to my method of management, perhaps a detail of the experiment may be acceptable to some of your numerous readers. The experience of three years proves it to be both practicable and advantageous.

When the forest trees are from 4 to 5 ft. high, I commence the winter pruning by taking off all the strong side shoots up to the leader, and cutting them close to the bole of the tree. I leave a few of the small weak shoots, at about 15 or 18 in. apart, on all the forest trees (except the ash), from which they are all removed; I consider these to be of service in conducting the sap to the leading shoot. I prefer those shoots whose

points are declining. The buds of the ash, being much larger than those of the other forest trees, are of themselves capable of absorbing the superfluous sap.

Young thriving plantations require to be pruned and thinned every two years. The same method as at the first is followed in all subsequent prunings. I afterwards take off some of those side shoots which were left at the first pruning, as many fresh ones will have grown out since. As the trees increase, I take off the lower branches, where they are intended to form a high wood, but those of the park or pleasure grounds of course remain untouched, as their beauty and grandeur depend on their widely extended limbs.

Where many larch and Scotch firs are interspersed with the forest trees, I remove some of their bottom branches at the first pruning: the spruce fir does not require this. At the second, and all future prunings, the bottom branches of every species of fir tree will require great attention. Peculiar care must be taken in thinning the plantations, as the trees will have grown much since the last pruning. The tops of the trees should stand clear of each other, as a free circulation of air is necessary to their health and vigour. When they are 20 ft. high they will require to be well thinned, after which but little pruning will be wanted.

I find early pruning and thinning to be essential: where this is neglected the trees make but little progress; for, being encumbered with useless branches, their leaders become stunted.

I have every reason to be satisfied with my experiments on summer pruning: I begin this operation when the young shoots are from 8 to 10 in. long; if done earlier, the leading shoots cannot dispose of the redundant sap, and many weak useless branches will be thrown out. The trees pruned the preceding winter make vigorous shoots in the spring; and it is on these trees only that I have practised summer pruning, by taking off their strong side-shoots, as in the winter pruning. I suffer some of the small side shoots to remain on all the forest trees, except the ash. The shoots at this season being extremely tender, require great care to prevent injury; and the operation is best performed with a small sharp knife. The damage arising from storms is in a great measure prevented by this pruning.

The growth of the trees which have been submitted to summer pruning far exceeds that of the others, especially the ash. Some of the leaders of the latter are upwards of 6 ft. long, strong and firm.

I first made the experiment of summer pruning in June 1828. The trees were about 6 ft. high; in the autumn of

1829, they exceeded 20 ft.; and the oak, beech, and other forest trees have grown in proportion. The summer-pruned trees are manifestly the strongest. Another advantage attending this system is, that the timber will be free from knots, the wounds soon healing after the removal of small branches; whereas injury necessarily follows from taking off large ones. The business of winter pruning will consist only in removing the small bottom branches.

I have this summer pruned a hundred acres of young plantations, which are remarkably thriving and healthy; I find the expense much less than that attending winter pruning, nearly in the proportion of one man to four.

Previously to planting, the ground is broken up by the spade or the plough, as deep as the soil will admit of. In exposed situations I plant at the distance of 2 ft. 6 in., making choice of strong healthy plants from the nursery 18 in. high. It is of great importance that the roots of the plants should not be exposed to the drying air; I have them well covered at all times. Under this process credit will accrue to the foreman, and advantage to the proprietor.

I am, Sir, &c.

J. BOWERS.

West Dean Gardens, August 23. 1830.

ART. VII. *Observations respecting Mr. Howden's Management of Forest Trees.* By Mr. J. ELLES.

Sir,

SOME excellent papers have lately appeared in the Magazine respecting the pruning and general management of timber trees, by practical men, of great experience and reputation; but as there are some points to which I cannot give my unqualified assent, a few observations with reference to those points may, I trust, not be deemed impertinent. To begin, then, with our old, facetious, and excellent friend, Agronome. I wish Mr. Howden had kept us in ignorance of his real cognomen; there was a charm about the word "Agronome," which irresistibly impelled me to the perusal of his papers, in preference to any other. Yes, Sir, the facetious, the practical, and rigidly critical Agronome has latterly *illuminated* the principle of pruning forest trees, not, it is true, with a corona of wax lights, nor yet with a halo of gas, but (*hei mihi!*) by teaching us the greasy drudgery of dipping tallow candles!! (*lucus à non lucendo.*) Now, this comparison ex-

pears to me, with all due deference to Mr. Howden, to be not only lowering, but positively sinking, the dignity of our ancient profession. To be recommended to a tallow-chandler for instruction!!! I think there must be some consanguinity between prose and poetry; for this comparison reminds me of a ludicrous couplet I have seen or heard somewhere, exhibiting a specimen of what, I believe, the critics call the bathos, or the art of sinking in poetry; in which a death by lightning is thus described, due solemnity of course being given to the diction, for it is part of an epitaph:—

“ By elemental fire this maid was kill'd,
Behind a haycock, in John Stanly's field.”

Besides, Sir, my humble opinion is, that both metaphor and analogy are exceptionable modes of expression when reasoning on vegetable substances; for our deductions by analogy are not unfrequently the converse of those we arrive at by physiology. The strawberry plant, to wit: cut off the stolons as they appear, says analogy, and you will strengthen and fructify the parent plant. Touch not one till they are rooted, says physiology, and you will strengthen and fructify the parent plant. Now, which is right, analogy or physiology? Analogy, the novice would say; but the experienced horticulturist knows that physiology is right. Adjust (by pruning) the branches to the roots of transplanted trees, says analogy. Touch not a twig, or a leaf, says physiology; and physiology is right; notwithstanding a contrary opinion has been expressed by Mr. Gorrie, a man whose name I mention with great respect, and who is an honour to his profession.

That the plan of not pruning transplanted trees is strictly in accordance with the principles of physiology, I think few men will hesitate to admit; for the gardener is almost daily exemplifying the principle, in either striking or cutting, removing his celery plants, or transplanting his cabbages. I remember the time when it was thought excellent practice to dock all these, both at the top and bottom!! Even a carnation could not be layered nor a pink piping struck without some empirical mutilation!! A better practice now happily prevails. Besides, it is practised by thousands, merely from the effect of long habit and observation. In Devonshire the plan of not pruning transplanted apple trees is general, and there I first learned it from a farmer and planter, who knew as much about physiology as about Sanscrit; nevertheless he practised transplanting trees with as much success, though with infinitely less notoriety than the far-famed Sir Henry Steuart, whose

egotism and arrogance are now happily treated by gardeners with that contempt they so well merit.

May not, then, after all, some principle of this kind, I mean a physiological principle, interfere to render the perfectibility of the candle-dipping theory somewhat problematical? All knots come from the centre; so they do: but observe the number of lateral knots in embryo, doubtless as a provision in cases of accident, and which are always ready to protrude, and do protrude, on the removal of the parent branch; this is peculiarly the case with oak and elm; so that however early, or however carefully, they may be pruned, knots there will be, unless the distance is regulated so as to prevent the growth of those knots or branches; and this distance I hold to be of as much importance as all the systems of pruning put together.

I am no enemy to pruning deciduous trees; on the contrary, I agree with Mr. Howden, that to prune well we should prune early; but all the pruning in the world will not effect the forester's intention, unless a due regard be had to the distances when thinning out. On it depend the form of the tree, and, consequently, the value of the timber; and, at the last thinning, on the distance depends the value of the underwood, a consideration too frequently overlooked. Leave an acre of ground covered at regular distances with forest trees, and what will be the value of the underwood? — Not worth cutting. Leave the same number in groups, and you not only have as fine timber, but the underwood becomes of the utmost value. I have seen thousands of acres of land covered with timber trees and underwood grouped in this manner, or closely approximating to it, and where pounds, shillings, and pence were not secondary considerations; and it has been found to answer well.

Mr. Howden strongly advocates pruning the fir tribe; no doubt he has good reasons. I am decidedly opposed to pruning them at all. I mean the silver, Scotch, and spruce; the larch is of a different nature. Early pruning, or pruning at all, injures the growth of the spruce and silver; the Scotch bears cutting better; but the wood is irretrievably injured in all by pruning, for they have a most provoking disposition to swell and bulge out round a wounded part, and, by the very process of healing, considerably elongate the original wound.

One observation more, and I have done for the present. I do not think it at all surprising that people should differ in opinion respecting the management of forest trees, when we consider that it is barely possible for one man to live long enough to ascertain the merits or demerits of his own prac-

tice : he lops, and prunes, and dies ! Even his very name is probably forgotten before the objects of his care, his solicitude, and skill, are put to the test by the plane of the carpenter.

I am, Sir, &c.

Palace Gardens, Armagh, Aug. 28. 1830.

J. ELLES.

THE preceding communication we consider of very great importance, and we earnestly recommend it to the study of the young gardener. The error of taking off strawberry runners before they are rooted, and that of adjusting the branches of transplanted trees to the roots, we had fallen into ourselves, and we therefore feel the force of Mr. Elles's arguments. We repeat our opinion, that communications of this kind are invaluable to the practical cultivator. — *Cond.*

ART. VIII. *On the Culture of Seedling Ranunculuses.*
By the Rev. JOSEPH TYSO.

Sir,

I HAVE been making experiments on the culture of seedling ranunculuses for five or six years, and I have at length succeeded to admiration. This year I had one seedling bed, 20 ft. long and 3 ft. broad, which contained about 500 roots, out of which I have selected more than 100, many of which will vie with their renowned predecessors. One obtained the first prize at our annual show at the Town Hall, and also the premium prize, as being the best flower exhibited that day. The root was afterwards sold to Mr. Brown of Slough for five guineas. The florists then went to see the bed, and expressed their admiration. Mr. Brown purchased another root for three guineas, and several others were sold at the same time for a guinea a root. A few days after ten pounds were offered for three other roots, but were refused. As this is not the age for keeping secrets, when making them known will be a public benefit, I most cheerfully communicate my method of culture to you.

Some years ago I sowed some ranunculus seed, but not one vegetated. Next year I examined the seed I sowed, by the aid of a small lens, and found it only *chaff*. Some time afterwards I obtained a *thousand* seedlings, which had never bloomed, but they did not produce any good flowers ; they were evidently grown *to be sold*. However, I sowed some seed from the best semidoubles ; this produced only a few promising blooms. I thought if I could sow seed from my old double flowers, my seedlings would many of them be

double. I then began to impregnate the double flowers with the farina of the single ones. This could not be done with effect in every case; but wherever I found an old flower with a pericarpium, or eye, I gathered a single or semidouble flower, and applied the farina to the eye of the double flower. Soon after this operation I perceived the pericarpium or seed-vessel increase in size, until many of them became an inch long, particularly those of the Variat, Arbrisseau, Grand Monarque, Horatio, Rose Incomparable, La Tendresse, and a few others. I kept the seeds separate, at least I preserved them in *classes*; dark yellow-edged, &c., and others the most strongly marked; and sowed them in separate boxes, and the next year I planted the roots in separate rows. The result has been that they all bear a striking resemblance to the *mother plant*, as to colour and habit of growth. The seeds sowed from Naxara, Variat, and Viola la vraie noire produced *dark* flowers. Those sowed from Arbrisseau, Grand Monarque, and Horatio, produced *yellow* spotted and edged, and several superior to the original plants. Double flowers cannot produce seed, because they contain no anthers, but merely the germ, which must come in contact with the farina from the single flowers before it can be impregnated; for which reason no good seed can be saved from double flowers without a bed of seedlings.

I have sowed at all seasons from the 1st of August to the 1st of March. I prefer the middle or latter end of October, and the beginning of January, to other times. I sow in boxes 18 in. by 11 in. and 4 in. deep. I fill them full of loamy earth, and press the surface level. Then I sow the seeds about an eighth of an inch apart, cover them as thinly as possible, and water with a fine rose; then I place the boxes under glass without heat. The plants usually make their appearance in about a month. I give air day and night, except in severe frost; then I cover up with straw mats; with such protection the young plants will endure the severest seasons. Mine were not injured by the severity of last winter. I clean the surface of the boxes from green moss in February, and top-dress them. I put the boxes in the open ground up to the edge the second week in May, and water daily until the grass begins to wither. I then suffer the boxes to become quite dry; and in the middle of July I take them up and preserve the roots in bags until February, when I plant them as I do my general stock. In the following June they flower in great profusion.

I am confident if florists would adopt this method that more than half the old flowers under name would soon be thrown into mixtures. Much has been done in raising seed-

ling tulips, carnations, pinks, auriculas, and polyanthuses, yet nothing has been done to any extent in the culture of the ranunculus, though it excels all other flowers in the symmetry of its shape, and in the brilliancy and variety of its colours. A bed of choice ranunculuses presents one of the most attractive objects Nature can exhibit in her gayest mood. There you behold black, purple, and violet of every shade, mingled with others as white as snow. There you see crimson, red, and rose of various tints; orange, yellow, and straw of every die. Many are striped as distinctly as the carnation, some are red and white, and others scarlet and gold. Numbers are edged like the picotee, having white, buff, or yellow grounds. Others are shaded, spotted, and mottled in endless variety. The sight of such a collection instantly fills the spectator with admiration and delight.

I am, Sir, &c.

Wallingford, Sept. 1. 1830.

JOSEPH TYSO.

ART. IX. *A simple and effectual Method of killing Wasps.* By W.

Sir,

IN your Magazine, last year, you gave several very good methods for destroying wasps (Vol. V. p. 277. 332. 438.); but the method I by mere accident found out, the other day, is still more simple and effectual than any of those you have mentioned, and the whole operation does not take a minute.

My plan is this: — When a wasps' nest is found, I take about half a pint of tar in a pitch-ladle, and run part of it into the hole where the nest is; put the remainder of the tar round about the mouth of the hole, and the job is done. All the wasps that are in the nest are caught in their attempt to come out, and those that are out are caught in their attempt to go in: so that none escape. If the nest should be in a place where the tar will soon get dry, it may, perhaps, be better to put a little more tar round the hole the following day; as, in general, there are a great many of the wasps which are out all night, and when the tar is dry it will not catch them.

It is not necessary to dig out the nest; and the tar may be applied at any time of the day, even when the wasps are most busy.

Within the last week I have destroyed above twenty nests, and the wasps at no time made any attempt to sting.

I am, Sir, &c.

C——, near Winchester, Aug. 24. 1830.

W.

ART. X. *On Insects in Orchards.* By Mr. D. ANDERSON.

Sir,

It will be admitted that horticulturists are more susceptible of, and more exposed to, the vicissitudes of the atmosphere, and to destruction by insects, in their labours and property, than most other men, and indeed more than even agriculturists in general. Much light has been thrown upon this subject by your various correspondents, and much yet remains for investigation and observation. I have two acres of orchard; of from twenty to thirty years' standing; three fourths apples: I have paid considerable attention to their growth and crops during that time, and I find that apples suffer more from insects than any other sort of orchard fruit. I have not, however, been able to discover any effectual remedy, nor do I think any will be found, as I conceive the evil does not arise from any peculiar state or condition of the trees, or soil, or situation, but from the early or late, wet or dry, state of the season, over which we can have no control. If the months of January and February be mild and temperate, the blossom buds become prominent; and if the month of March be dry and frosty, as is often the case, the buds become stagnant in rather an open state. Just then a certain small fly makes its last change, and coming forth on wing, strikes its egg into the eye of the bud. The egg soon comes to a caterpillar, which, during the months of April and May, eats out the blossom, and, when full grown, preys upon the young foliage, and may be seen hanging by a thread, and resting upon your hat and clothes as you pass under; it leaves the trees, in the latter end of May, as naked as they were in winter. This is a small light green caterpillar, one third of an inch long, which does not lodge itself on the trees, but, like the gooseberry caterpillar, buries itself in the ground till the proper season for coming forth. The years 1817, 1819, 1821, 1824, and 1827 exhibited these appearances in a greater or less degree. On the contrary, when the early months are severe, the buds are kept back till April: if then the season proves mild and wet, the fly is impeded, the bud is encouraged, and in May the blossom opens freely, and seldom fails of a crop, as in the years 1818, 1820, 1822, and 1826; and, if my views on this subject be correct, I calculate upon a full crop of apples this year.

D. ANDERSON.

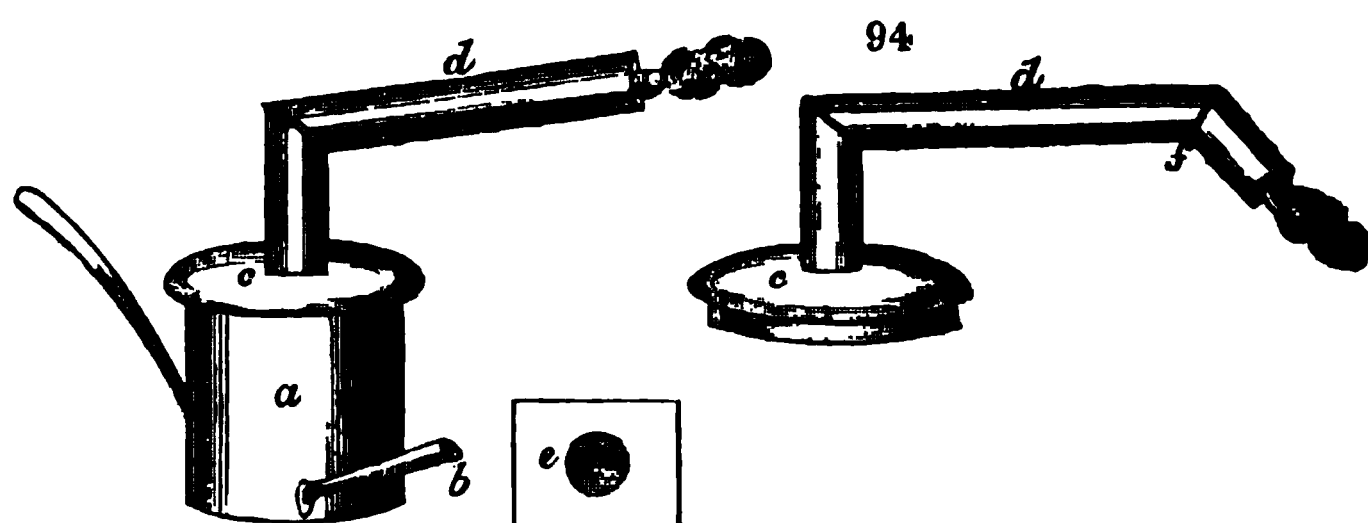
Driffeld, Yorkshire, April 30. 1829.

ART. XI. *On the Green Fly in the Blossoms of Peach Trees.*
By Mr. JAMES CRAIG, Gardener to G. Cholmeley, Esq., Howsham, York.

Sir,

LAST year the blossoms of several of the peach trees at this place, both on the walls and in the houses, appeared unhealthy: they seemed not to expand freely, which induced me to examine them minutely, when I found, in many cases, three or four green flies in a flower, surrounding the base of the style, which in consequence was discoloured and sickly; and, in short, all such set no fruit. At that time I could not find any of these insects but what were in the flowers; hence I infer that the larvæ had been deposited in the inner folds of the buds during the preceding summer. I tried an experiment to check them on one tree on the open wall as follows: I added clear water to tobacco liquor till I brought it to the colour of pale ale, and in that state applied it freely with a fine syringe to the tree when in full flower. This killed part of the insects; and the remainder were so sickly after it that they were unable to do much harm until the fruit was set, when I considered myself at liberty to give them a much stronger dose. I do not pretend that this is altogether a safe method, although, from the closest observation I could make, I did not discover that the tree thus treated sustained any injury from the treatment; the atmosphere might at that time be in a state to favour it: it was done in the forenoon, and the liquor was probably soon evaporated; otherwise it might, by remaining a long time in the flower-cups, have done as much harm as the flies. The necessity of endeavouring to extirpate this pest to the peach tree cannot be too often pressed on the gardener's attention, as they multiply so very rapidly. Tobacco liquor is the best thing I know of for this purpose, after the fruit is set, until the trees shed their leaves in the autumn. When the major part of the leaves are fallen, I recommend syringing every part of the tree with soap-suds and urine; and this repeated several times between that time and the opening of the buds the following spring. When these insects commence their attacks on peach trees under glass before the fruit is set, no remedy that I know is better or safer than the old one of fumigating with home-grown tobacco; and I take the liberty of attempting to give you a description of a fumigating pot (*fig. 94.*), which, I believe, is not generally known. I never saw but one of the kind; one which my father got made many years ago. It is made of sheet iron, holds about 3 lbs. of tobacco, and acts on the outside of the house: the bellows it is worked with are double blasted.

The pot may be made at a trifling expense, and, with care, will last for many years.



a, the pot ; *b*, the blow-hole, with a grate at the inner end ; *c*, the lid, on which is fixed a tube (*d*) to convey the smoke into the house, through an aperture made in a square of tin (*e*) which is fixed into the upright sashes (one in every third or fourth sash) instead of a square of glass ; when there are no upright sashes, the tube will require another angle (*f*). An apparatus of this sort is very convenient, as any person may work it, and fill the houses to any degree required without suffering a night's sickness by it.

J. CRAIG.

Howsham, February 15. 1830.

ART. XII. *On the Destruction of the Black and Green A'phides on Cherry and Plum Trees.* By N. T.

Sir,

IN my former communication (p. 403.) upon the subject of insects, I observed that the mixture described would not destroy the black A'phis on the cherry tree, nor the light green A'phis on the plum tree. I have now found that by the addition of another ingredient, viz. one gill only of tobacco water, such as can be procured from any of the tobacconists, both these troublesome insects are readily and effectually destroyed, by applying it in the manner before recommended. About three weeks ago I immersed all the young shoots of my cherry trees, plum trees, and black currant trees, which were infested with the A'phides peculiar to each tree, in this mixture, as warm as the hand could bear without inconvenience, keeping the young shoots and leaves in it a few seconds only. This was done in the evening after the sun was off the tree ; and I found the A'phides all dead the next morning. The leaves of these young shoots are now free from

them, and as vigorous as if they had not been attacked by the insects. In this method of destroying them there is not that waste of liquor which there is in other mixtures applied by means of the garden engine. One ale quart was sufficient for all the cherry trees and plum trees in my garden.

The sulphuret of lime may be kept almost any length of time, so as to be ready for use when wanted for making the mixture, by filling small bottles with it, corking them, and immersing them, with their necks downwards, in a vessel of water.

I am, Sir, &c.

July 10. 1830.

N. T.

ART. XIII. *A cheap and easy Method of raising Celery.**
By Mr. E. ROGER.

Sir,

As almost every person who has a garden plants a few early potatoes, those who are fond of celery will find the following method of raising it cheap, simple, and easy.

After the potatoes are fully hoed up, it will be found that the furrows are an excellent ready made trench for the celery; then take a small spade, and cover in a good dose of strong manure betwixt every alternate row of the potatoes, every furrow would be too close, and then plant in the usual manner. In digging the potatoes, take up every alternate row first, which will give more air to the celery.

The advantages of the above plan are as follows:—1st, no ground is lost by the celery crop; 2d, no labour is required in making the trench; 3d, the celery plants really thrive better at first by being partly shaded by the potatoes; and 4th, the celery can be partly earthed up when digging the potatoes, without any additional labour.

I may also observe that every economical gardener may also take a crop of early cabbage from the other furrows, as every alternate furrow is only occupied with the celery; the other furrows may be planted with spring-sown cabbage plants, which will be quite ready for cutting before the earth is wanted for the celery. I remark farther that celery plants raised in the open air are by far the best, and just as easily raised as green kail or cabbage, notwithstanding the mystifications of some of the professional gardeners.

* Originally published in the *Ayr Advertiser*, and recently sent to the *Gardener's Magazine* by Mr. Roger.

It will be seen that the above plan is really taking three crops off the same piece of ground, which will of course require to be well manured. Do not forget that "the midden is the mither o' the meal-kist."

I am Sir, yours, &c.

E. ROGER.

Turf Inn, Kilmarnock, June 18. 1828.

ART. XIV. *On raising an early Crop of Peas, as formerly practised in Tynningham Gardens, East Lothian.* By Mr. MAIN, A.L.S.

Sir,

THE indefatigable President of the Horticultural Society, among his many valuable papers presented to the Society, has one on the practicability of raising a first crop of peas, by transplanting. On this same subject it may not be amiss, for the information of your readers, to detail the practice of gardeners in Scotland forty years ago, particularly the never-failing method followed by the late Mr. Thomas Thomson at Tynningham, the seat of the Earl of Haddington.

About the 10th of November, provide as many clean 24-sized pots as may be necessary; fill them with light rich compost; divide the pots by a diametrically placed piece of broken glass, slate, tile, or any thin bits of pales cut to length, thrust down into the mould; draw, with the two fore and middle fingers united, shallow drills on each side the partitions. In these sow the seed (the earliest sort) moderately thick; cover with the compost; plunge the pots in a cold frame, in an open spot, and protect them from mice and frost; giving air on all seasonable occasions throughout the winter. As soon as the rigours of winter are over, they may be transplanted; if under a south wall the better. Dig a spit along and close to the wall; cut out a shallow trench within 5 in. from it; turn out the contents of each pot into or upon the hand; withdraw the partition, and separate the roots of the divisions which will be found united at bottom with a knife; then place the divisions along the trench, earth up, and make all smooth. Stick them immediately with light slender sticks previously prepared, and about 2 ft. high. This will not only defend them from the boisterous equinoctial gales which happen about that time (middle of March), but also from frost. The peas are fit to gather about the 1st of May, according as the spring is more or less genial.

I am, Sir, yours, &c.

Chelsea, Aug. 1829.

J. MAIN.

PART II.

REVIEWS.

ART. I. *The Villa and Cottage Florist's Directory*; being a familiar Treatise on Floriculture, particularly the Management of the best Stage, Bed, and Border Flowers usually cultivated in Britain. To which are added Directions for the Management of the Green-house, Hot-house, and Conservatory; with the different Modes of raising and propagating Exotic Plants: interspersed with many new Physiological Observations and various useful Lists. By James Main, A.L.S., Editor of the 23d Edition of *Maw's Gardener's Calendar*, and a Writer in various Departments of Gardening, Agriculture, and Natural History. London, 1880. 12mo. 6s.

THIS work is intended for practical florists; and where the author adheres to what should have been his sole object, the communication of the information obtained from an apparently extensive and long experience in the management of the flower-garden, the green-house, hot-house, and conservatory, we know few works that more deserve the patronage of the public than this little volume. But, soaring above the ambition of the horticulturist, Mr. Main has unfortunately involved himself and his readers in clouds and vapours, in attempting to theorise on vegetable physiology. Whilst, therefore, on the first account, we can honestly recommend the volume as a practical guide to the young and inexperienced florist, it is our duty to prevent erroneous impressions from being made, where they are most likely to be received, and to become permanent, on the minds of the uninformed and credulous. It is to this portion of the work that it behoves us, reluctantly, to direct the attention of our readers.

In describing the nature of bulbs, and the manner in which the offsets or young bulbs are produced, Mr. Main has given a kind of definition of the *corculum*, which, we confess, is far beyond our homely understanding. He informs us that it

is "an indefinite series of *dividual essences*, which are annually brought forth in succession;" that "it is the most essential *organ* of a vegetable being;" and further, that it is "the *fountain* which first contains, and from whence flows all the productions of a plant." Now, previously to reading these passages, we flattered ourselves that we had some idea of what is usually understood by the word *corculum*, in reference to a bulb; we find, however, that we had quite mistaken the meaning of the term. But whether it is an *essence*, or an *organ*, or a *fountain* of vegetable production, our worthy author should have informed us, as assuredly it cannot be all three. We are still more puzzled to comprehend what follows. "It is," says our author, "variously located in the system: in some, it is confined to one place; in others, detached in groups from the first station; and, on the generality of trees and shrubs, it is diffused like a covering over the whole surface of the plant." (p. 2.) We are also informed that "the first, or highest in order," of this series of essences, "is, in the autumn *before it is developed*, composed of a surrounding envelope of thick fleshy bodies, like scales." Now, we candidly acknowledge that we have not capacity sufficient to understand this mysterious passage; but we are willing that our objections to it should be set down solely to the obtundity of our everyday intellect. We dare not attempt to follow our author in his profound lucubrations respecting the developement of the "processes of the *senior* part of the *corculum*," nor those regarding the increase in size of the vital principle (p. 3.); nor express our astonishment at the discovery, "that the *essence* which covers the whole surface of trees and shrubs is no bigger than a grain of mustard seed;" neither will we venture to dispute the still more extraordinary information respecting the influence of disease in hyacinths. We speak this advisedly; for our author informs us that the new bulb is formed "by the *gouty* basis of some of the last and this year's leaves embracing those, together with the stem and flower, which are to be expanded in the next." The transcendental philosophy is a mere joke, comparing it with the mysticism of that of our honest phytologist.

It is surely unnecessary to say one word more on the physiology of this volume. We blame the author for his temerity in throwing away his bladders before he has learned to swim, and incautiously venturing beyond his depth; in plainer language, for introducing as physiology, vague, unintelligible, and crude ideas into his otherwise useful book; lessening his authority with his readers; and rendering them distrustful of

the practical instruction that he is so well fitted to afford to them, by the exposure of his ignorance of a subject which is altogether out of place * in his volume. It is painful to be obliged to make these remarks, especially when the castigation is applied to an individual who is a very able floriculturist, and a most respectable man; but we have a public duty to perform paramount to every other consideration. We therefore recommend the purchasers of this book to pass their pens over what is termed the physiology; and then they will find it a very useful guide.

But, leaving this part of the subject, we would correct a few errors that have crept into the better part of the volume. Thus tubers are frequently confounded with roots; and we are informed that the turnip and carrot are "bulbs differing only in form." Now we can most confidently assure our readers that neither bulbs nor tubers are ever the productions of roots, but of the stem, or ascending axis of the plant; and that the turnip, and also the carrot, is a real root or descending axis: it is of little importance, and does not invalidate the fact, that the portion of the stem usually producing bulbs and tubers is beneath the surface of the ground. We are more surprised that such an error should appear, after finding it stated, that tubers are productions of the stem. (p. 19.) We are also informed that the leaves are of no use in perfecting the young bulb; yet, in treating of the cultivation of polyanthus-narcissus, our author correctly admits that cutting off the leaves whilst in vigorous growth is detrimental. He doubts whether the crocus can be ranked as a bulbous plant. If it be not, what is it? The author's application of the phrase "vis inertiae," to what he terms the sleep of the anemone, is perfectly new. In the use of well-known terms he is also frequently incorrect: thus he calls the support of the carnation a *peduncle*, whereas the immediate support of every flower is a *pedicel*; the prop of the pedicel, if it has one, is a peduncle. He uses the word *fecundified* instead of *fecundated*; and frequently other words peculiar to himself: thus, for example, *cauline* instead of *caulinar*. His employment of terms that

* We cannot agree with our reviewer in this position. Unless the subject of vegetable physiology be altogether beyond the reach of cultivators, in what work can the application of its principles be more appropriately introduced than in a treatise on flowers? The fault of our excellent friend Mr. Main consists not in having introduced the subject; for that he appears to us to deserve great praise; but, as we have mentioned to our friend personally, in having mystified it. Mr. Main has too much good sense and good feeling, not to profit from the reviewer's remarks. — *Cond.*

have very distinct meanings as synonymes is also curious : for instance, the phrase “bundled or pendulous tubers ;” as if all pendulous tubers were produced in groups or bundles, whereas some, particularly in the Orchidéæ, are invariably solitary. We would also caution him against the employment of Latin plurals, until he ascertain the gender of their singular number : the words Hybernaculum and Lilium are neuter nouns, and, consequently, cannot have the plural in æ ; thence Hybernaculæ and Liliæ are incorrect.

We should be doing injustice to our author, if, notwithstanding these remarks, we did not admit, as we have already done, that the volume contains much valuable information to the young and inexperienced florist.

A. T. T.

ART. II. *Catalogue of Works on Gardening, Agriculture, Botany, Rural Architecture, &c., published since June last, with some Account of those considered the most interesting.*

Our *Hortus Britannicus* being now published, we shall in future, in enumerating the plants figured in the Botanical Periodicals, place a star (*) against all those which are not enumerated in the Catalogue. This will direct the attention of our readers to these species, which will be collected together at the end of every year, and incorporated with other newly introduced or discovered species in the Annual Supplement to that work.

BRITAIN.

Curtis's Botanical Magazine, or Flower-Garden displayed ; New Series. Edited by Dr. Hooker. In 8vo Numbers, monthly. 3s. 6d. col. ; 3s. plain.

No. XLII. for June, contains

2990 to 2996. — *Oncidium altissimum*. — *Crœcus minimus*. A presumed British plant, unknown in our gardens, but as elegant and prettily varied with colour as any in the genus. — *Euphorbia corollata*. Raised at Bury Hill, from seeds sent from North America by Mr. Nuttall. — *Sphæcele Lindlèyi*. From Valparaiso ; flowered in 1828. — *Helœnium autumnale*. — *Aster laevis*. — **Cymum montanum*.

No. XLIII. for July, contains

2997 to 3003. — *Renanthera coccinea*. — **Ranunculus cardiophyllus*. “One of the many new discoveries made by Dr. Richardson and Mr. Drummond in the second over-land Arctic expedition, under the command of Captain Sir John Franklin.” Found in the limestone districts of Canada, and in the alpine prairies of the Rocky Mountains, between lat. 52° and 55°. Large bright glossy yellow flowers, which remain a long time expanded ; hardy. Whether a perennial or an annual is not mentioned ; but “it is likely to prove a great acquisition to our collections of hardy plants.” — **Indigofera sylvatica*. The *I. speciosa* of the gardens. A showy conservatory plant, with bright rose-coloured flowers, inclining to purple. — **Begonia longipes*. — *Trillium erythrocarpum*. Pure white petals, marked with a bright purple

stain. From Canada to the Glasgow botanic garden, by Mr. Cleghorn [? an old friend of ours]. — **Eutoca sericea*; *Hydrophylleæ*. A pretty and perfectly hardy perennial alpine, from the Rocky Mountains, in North America, by Mr. Drummond.

No. XLIV. for August, contains

3004 to 3010. — *Terminalia Catappa*; *Combretaceæ*. A tree of India, bearing a drupe, containing a nut, the kernel of which resembles that of an almond or filbert in flavour, and yields an oil equal to that of the olive. The fruit is abundantly eaten in India. — *Didymocarpus Réxii*. From Southern Africa, by Mr. Bowie, to Kew. — *Crotalaria ovàlis*. — *Moricandia arvensis*. "The Glasgow botanic garden is indebted for the possession of this plant to Messrs. Young of Epsom, whose choice collection of plants is only equalled by the liberality with which they distribute them wherever they can be of real service to science, and who may justly be ranked among the first and most zealous cultivators in the kingdom." — *Ribes cereum*. A much branched compact twiggy shrub, growing from 4 ft. to 6 ft. high, on the banks of the Columbia, whence it was introduced to the Horticultural Society by Mr. David Douglas. — *Ranunculus millefoliatus*. A native of Italy, in the north of Africa, and seeds of it were lately sent to the Glasgow botanic garden. — **Phrynium coloratum*; *Canneæ*. Introduced from Brazil by Richard Harrison, Esq., and flowered in Lord Milton's stove in April last.

No. XLV. for September, contains

3011 to 3017. — **Bignonia grandifolia*. One of the handsomest of stove climbers. — **Lobelia Kraussii*. A stove plant, of moderate beauty, from Dominica, in 1828. — **Encyclia patens*. A stove epiphyte, from Rio de Janeiro to the rich collection at Aigburgh. — **Vanguiera velutina*; *Rubiaceæ*. A stove shrub, from Madagascar, of very little beauty. — **Ceropegia elegans*; *Asclepiadeæ*. A most elegant stove twiner, showing its beautiful greenish white flowers, thickly spotted with purple, in January. It was sent to the Kew garden, by Dr. Wallich, in 1828. — **Brachystelma crispum*; *Asclepiadeæ*. A most elegant bulb, sent from the Cape of Good Hope, by Mr. Bowie, to the select collection of Mr. Neill, at Cannon Mills. — **Anthericum bulbosum*. A handsome yellow-flowered *Anthericum*, from New South Wales.

Edwards's Botanical Register. Continued by John Lindley, F.R.S. L.S. &c. Professor of Botany in the London University. In 8vo Numbers, monthly. 4s. coloured.

No. IV. for June, contains

1327 to 1334. — *Anona* (*menona* or *manoa*, Malayan names) *laurifolia*. A small tree, from the islands of the Caribbean Sea, flowering in August; blossoms large, of a deep orange; foliage handsome; fruit of no value. — *Mammillaria pulchra*. — **Mimulus propinquus*. — **Cactus* (subgen. *Epiphyllum*) *Ackermanni*. From Mexico, by Mr. George Ackermann, in compliment to whom it was named by Mr. Haworth. It is remarkable, "that about the same time that Mr. Tate's imported plant blossomed, our artist was summoned by Mr. Mackay to make a drawing of a seedling raised by Mr. Smith, gardener to Lord Liverpool, at Combe Wood, which proved so similar to this as to give rise to doubts as to the originality of the species. We understand that the flower of this seedling is rather larger, and its colour deeper red than that of the Mexican plant. It was first brought into bloom by John Brampton, Esq., of Stoke Newington, a gentleman who cultivates a small but very select collection of stove and green-house plants." The young

shoots have a deep red margin, which is not the case with the mules referred to. "A most desirable species, excelling, in brilliancy of colouring, even the well-known *C. speciosissima*." — *Acácia uncinata*. "Very near *A. armata*." — *Podolobium trilobatum*. "The leaves of this and some other leguminous plants are opposite; a striking exception to the general fact, that in that order they are alternate; and a proof that what botanists consider even the most fixed characters are occasionally liable to deviation: so imperfect are the means we at present possess of distinguishing, by external indications, the constitutional peculiarities of vegetation." — *Justicia guttata*; *Acanthaceæ*. A tender stove perennial, flowering in August, and increasing freely by cuttings. Presented by the East India Company to the Horticultural Society. It is a native of the Pundua Mountains. "The marking of the corolla with deep blood-red spots, upon a greenish ground, is exceedingly pretty: when closely examined, it will be found to arise from the presence of a deep crimson colouring matter, filling here and there the cavities of the cellular tissue of the parenchyma, and not existing in that part which forms the ground colour. When will natural philosophy tell us why contiguous spaces on a plane surface, the functions and anatomical structure of which are uniform vary thus in the matter they secrete?" — **Lobelia purpurea*. A handsome half-shrubby plant, from Valparaiso, "growing in the open border in the summer, but requiring protection in the winter. It does not ripen its seeds, and can only be increased by cuttings, or division of the crown of the root."

No V. for July, contains

1335 to 1341. — *Brunsvigia grandiflora*. A noble addition to the genus; no doubt a native of the Cape of Good Hope. Approaching *B. striata* in flower, and *B. Josephinæ* in bulb. — *Kennedya monophylla* var. *longiracemosa*. Raised from New Holland seeds, by Mr. Rollison of Tooting. A green-house plant, of much beauty, propagated readily by cuttings. — *Pothos scandens*; *Aröideæ*. Imported from China by Mr. Tate of the Sloane Street nursery. It roots into the bark of trees, in the most shady forests of India. — *Tillandsia stricta*; *Bromeliaceæ*. From Buenos Ayres and Brazil, to Peter Kendall, Esq., a zealous cultivator of curious hot-house plants, who presented it to the Horticultural Society. "This is among the most beautiful of its tribe, and one that is very easily cultivated. Mr. Kendall finds it succeed remarkably well with the following treatment: — In June he takes it out of the stove, and suspends it from a wall in the open air, where he leaves it without water, attention, or protection, till the succeeding October; thus creating a sort of artificial winter. When the time for placing it again in the stove arrives, it is found withered, discoloured, and, in appearance, half dead: as soon, however, as it is again submitted to heat and moisture, it recovers rapidly, commences a new and vigorous growth, and in the course of a few weeks loses all traces of its previous sufferings, assuming a rich healthy vegetation. After throwing out suckers from each side, it shoots up its spikes of bright blue flowers, which begin to open in March, and endure till the end of April: when the period for a cessation of growth draws near, its parts harden, its flowers fall away, and by June it is ready again to undergo the same treatment as before. It is no doubt desirable to create an artificial winter, or cold season, for all tropical plants, if it be possible, but this is generally impracticable; and although Mr. Kendall's management succeeds with this, and two or three similar plants from the same part of the southern hemisphere, it by no means follows that it can be applied generally; on the contrary, we know, from experience, that Brazilian and West Indian epiphytes of the orchis tribe are destroyed by it." — *Passiflora ligularis*. Nearly related to *P. quadrangularis* and *edulis*; the fruit is said to be about the size of an orange, and eatable; the leaves are entire. — *Justicia quadrangu-*

lâris. A tender stove plant, of easy culture in a damp hot atmosphere. — **Phycella Herbertiana*; *Amaryllidææ*. From the Andes, by Mr. M'Rae, in November, 1825.

No. VI. for August, contains

1342 to 1348. — *Senecio filacinus*. "A most lovely shrubby plant, cultivated easily in the conservatory, striking freely from cuttings, and well adapted for the flower-garden in the summer." From the garden of the Duke of Northumberland, by Mr. Forest. It is supposed to be a native of the Cape of Good Hope, and to have a near affinity with *S. lanceus*. — *Argemone mexicana* var. *ochroleuca*. — **Crassula turrita*. From the "very rich collection" of C. Law, Esq., Nelson Terrace, Newington Road, now about to be disposed of, and which is "one of the most interesting in the neighbourhood of London." — **Habranthus Andersoni*. From Monte Video, to Mr. Mackay of the Clapton nursery, in 1829, by Mr. Anderson, his collector, in whose honour the specific name is given by the Honourable and Reverend W. Herbert; flowers of a golden yellow, with brownish red streaks on the outside, in April and May. — **Drimia villosa*; *Asphodelææ*. A green-house bulb, from the Cape of Good Hope to Mr. Tate of the Sloane Street nursery, in May, 1826. — *Collomia heterophylla*. — *Gœum chilense* var. *grandiflorum*.

No. VII. for September, contains

1349 to 1355. — *Ribes sanguineum*; *Grossulacææ*. The district of the Columbia River, on the north-west coast of America, abounds with currants, remarkable for the great beauty of their flowers. One of these is *R. aureum*. The present subject "is inferior in beauty to no plant in cultivation. It is as hardy as the common currant of the gardens, and bears a vast profusion of bunches of the most lovely purplish-red flowers, during the end of April and beginning of May, remaining in perfection full three weeks." Readily increased by cuttings, either of the new or old wood. Prefers a dry soil, but not peaty, as it is apt to die off in swampy places. "This species was sent by Mr. Douglas to the Horticultural Society; and of such importance do we consider it to the embellishment of our gardens, that if the expense incurred by the Horticultural Society in Mr. Douglas's voyage had been attended with no other result than the introduction of this species, there would have been no ground for dissatisfaction. It is not the number of objects that a public body or an individual accomplishes that creates a claim to public gratitude, so much as their utility; and, in this view, the gentleman who brought the first live plant of the now common China rose to England deserves his country's gratitude in a greater degree than all the collectors who have sent plants to Kew for the last twenty years. But if we consider that it is not *R. sanguineum* alone that the Horticultural Society has introduced through the same active traveller, but that the gigantic pines of North-west America, one of which yields timber superior to the finest larch; *Acer macrophyllum*, the wood of which is as much better than our sycamore as the species is superior in the beauty and amplitude of its foliage; *Gaultheria Shallon*, an ever-green shrub of great merit; have all been secured to this country, and distributed in every direction, — to say nothing of the beautiful lupines, pentstemons, berberies, œnotheras, and other plants of less moment; — when all this, we say, is considered, it is not too much to assert that this result alone has justified all the expenditure of the Society's garden from the commencement, and has stamped it with a character of great national utility, which nothing but future mismanagement can shake."

This species was originally discovered in 1787, by Archibald Menzies, Esq., during his first voyage round the world; and again, in his second voyage with Van Couver, in 1792. Lime, or lime rubbish, mixed with the soil in which it grows, adds to the profusion and depth of tint of the blossoms.

**Lachenalia pallida* of *Thunb.* — *Phlox speciosa*. A rare species from Columbia, extremely impatient of cultivation. "The late incessant rains have nearly destroyed it; and it is to be feared that it will be soon lost altogether." — *Acacia lunata*. — **Sterculia Tragacantha*. The tragacanth tree of Sierra Leone; "a gum resembling gum tragacanth being copiously exuded by it when wounded." — *Vaccinium ovatum*. A handsome evergreen shrub, bearing an edible fruit, like most of the vacciniums, and of easy culture in shady situations. — **Scilla plumbea*. A bulb imported from the Cape to Kew, and drawn there by Mr. Edwards in 1813, but now probably lost.

Botanical Cabinet. By Messrs. Loddiges. In 4to and 8vo Parts, monthly. Large paper, 5s.; small paper, and partially coloured, 2s. 6d.

Part CLVIII. for June, contains

1571 to 1580. — **Pleurothallis saurocephalus*; *Orchideæ*. Rio Janeiro. — **Erica multiflora*. — **Lantana lavandulæfolia*. — *Iris pumila*. — *Mimulus rivularis*. — *Fothergilla alnifolia*. — **Watsonia compacta*. — *Onoclea obtusilobata*; *Filices*. From Dr. Wray of Augusta; stove. — **Lechenalia multiflora*. — *Anthericum glaucum*.

Part CLIX. for July, contains

1581 to 1590. — *Plantago montana*. — **Andrömeda calyculata ventricosa*. — *Styphelia longifolia*. — **Rhododendron dauricum sempervirens*. "Much more adapted to our climate than the deciduous variety, as it flowers later, and is less subject to injury from early frosts." — *Primula Pallasii*. — **Camelia japonica corallina*. One of the varieties raised from seeds by Mr. Chandler. — **Armoria fruticosa*. — *Diplazium plantagineum*; *Filices*. A native of Jamaica. — **Fumaria cava*. — **Caladium lividum*.

Part CLX. for August, contains

1591 to 1600. — **Andrömeda polifolia angustifolia*. — **Bléchnum lancéola*. — *Ranunculus amplexicaulis*. — **Pyrus japonica*. — **Justicia Gendarussa*. — *Phlox crassifolia*. — *Primula inflata*. — *Prunus borealis*. — *Amýgdalus sibírica*. — **Epidéndrum rigidum*.

Part CXLI. for September, contains

1601 to 1610. — **Stelis tubata*. A curious epiphyte, from New Spain, in 1828. — **Rubus spectabilis*. From the Columbia River, by Mr. Douglas, to the Horticultural Society, where it appears to be quite hardy, producing red flowers in May. Whether it is a trailer, or a subfrutescent plant, like the common raspberry, is not mentioned. — *Streptopus roseus*. — *Jatropha panduræfolia*. — *Vaccinium ovatum*. — *Petræa erecta*. — *Prunus depréssa*, the *Cerasus depréssa* of *Pursh*, bearing a black, sweet, and agreeably flavoured cherry. — **Erica vernalis*. — *Ranunculus montanus*.

The British Flower-Garden. By Robert Sweet, F.L.S. &c. In 8vo Numbers, monthly, 3s.

No. XIII. for June, contains

49 to 52. — *Saxifraga retusa*. A beautiful and rare little species, resembling *S. oppositifolia*, from M. Schleicher, to the Chelsea garden. — *Rhododendron Smithii*. A hybrid between *R. ponticum* and *R. arboreum*; raised from seed by Mr. W. Smith of Coombe Wood, and will, there can be little doubt, prove quite hardy; peat soil and layers; "or young cuttings, with their wood nearly ripened, taken off at a joint, and planted in pots of sand, placed in a frame, or under a hand-glass, in a little bottom heat, will not be difficult to root." — *Plectoccephalus* (*plektos*, plaited, *kephalē*, a head; plaited leaflets of involucre) *americanus*; *Compositæ Centaurææ*. From the Arkansa territory, in North America, to Bury Hill. A beautiful annual, with blue and pink flowers, deserving a place in every collection. — *Primula villösa*.

No. XIV. for July, contains

53 to 56. — *Soldanella minima*. A native of the Carinthian Alps, and well adapted for rock-work, or growing in small pots. — *Oxalis floribunda*. "A most beautiful species, continuing to produce an abundance of its handsome rose-coloured flowers all the spring and summer, when planted in a warm border." — *Aquilegia glandulosa*. The sepals (segments of the calyx) of the flower are of a dark bright blue, and the petals of a delicate cream colour. A very handsome species, from the nursery of Messrs. Buchanan and Oldroyd of Camberwell, "who possess a large collection of hardy herbaceous plants, and are now forming a general collection of hardy trees and shrubs. . . . This species and *A. alpina* are certainly two of the finest of the genus, and few plants are possessed of greater beauty. *A. sibirica* is also very delicate and beautiful, and may be likened to the present species in miniature." *A. glandulosa* "appears to suffer a good deal from too much moisture in winter; it should therefore be planted in a border of light dry soil. The best way of increasing it is from seeds, which should be soon after they are ripe, the plants will then come up the following spring; but, if kept till spring before they are sown, many of them will not come up till the spring after that." — *Tris flavescens*. A pretty species, with yellow flowers and knotted tubercous roots.

No. XV. for August, contains

57 to 60. — *Dracocephalum altaianse*. A handsome herbaceous perennial plant, growing in dense tufts, with numerous very large dark blue flowers. From the Fulham nursery. — *Ornithogalum refractum*. From the Berlin botanic garden, to Mr. Anderson, at Chelsea. It is a native of grass fields in Hungary, and produces its white flowers from the end of April till June. — **Salvia fulgens*. A native of Mexico, brought into notice by Messrs. Newman, nurserymen, Chichester. — *Dodecatheon Meadia elegans*. A superb variety, raised by Messrs. Wood and Son, nurserymen, Huntingdonshire. On the cover of this number we observe Mr. Sweet advertising for a situation for a gardener, whom, he says, he can "take upon himself to recommend as the best gardener in the country." The gardener alluded to, Mr. Sweet observes, knows nothing of the present advertisement. It is gratifying to see such generous conduct on the part of Mr. Sweet; and we sincerely hope his advertisement may prove successful. We well know the individual alluded to, and can bear testimony to his high merits, both as a man and a gardener.

No. XVI. for September, contains

61 to 64. — **Potentilla Hopwoodiana*. A handsome hybrid, between *P. formosa* and *recta*, raised, in 1829, in Hopwood's nursery, at Twickenham. Colour bright rose. — *Viola canadensis*. A handsome American species, from the Bury Hill collection. — *Genista Scorpius*. A handsome spreading-branched spinous profuse yellow-flowering shrub, highly ornamental in April. North America; and of the easiest culture at Bury Hill. — *Silene compacta*. Among the finest of hardy annual border plants. Pink flowers in May and June, and of easy culture from seeds. A native of Mount Caucasus, and introduced by Mr. Hunnemann.

Botanical Miscellany. By William Jackson Hooker, LL.D. F.R.A. & L.S., and Regius Professor of Botany in the University of Glasgow. In 8vo Parts, quarterly. 15s. coloured; 10s. 6d. plain.

Part II. for September, contains

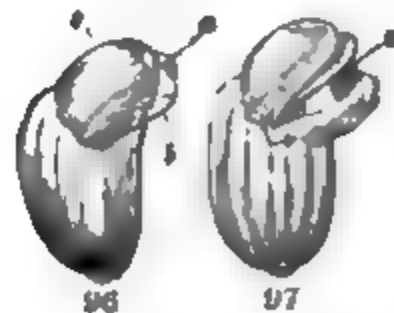
Saccharum officinarum, Officinal, or common, Sugar-cane. The cane of the West Indies was probably brought from Spain, since it is not indigenous to any parts of the New World. In the West Indies it refuses to perfect its seed, and has, from its introduction thither in the fifteenth century to the present time, been raised from cuttings of the stems. There are, in

consequence, very few varieties. Along the banks of the Ganges, its native region, the cane perfects its seed; and being frequently raised in this manner, it produces innumerable varieties. The oldest cane of the West Indies is called the country cane; there is also the riband cane, the Bourbon cane, and the violet or Batavian cane. "The cane is a plant of a warm latitude; its growth being in proportion to the heat of the climate, and the fertility of the soil. It may be considered as the production of the highest effort of the powers of vegetation. In almost all other plants, it is only during the germination of the seed, the most active period of their lives, that the sweet principle is to be detected. In the cane it is at all times to be found, and *that* in quantities surpassing what exists in all other plants put together. It is on our plains that the cane reaches all the perfection of which it is capable in these islands. Yet even here, according to report, its size and luxuriance are inferior to what it attains in Madagascar, the Isle of France, and the districts of the East, more immediately beneath the equator. Like all gramineous plants, it delights in a rather moist climate. When the rains, however, are excessive, a rank luxuriance is the consequence, unfavourable to the maturation of the plant; the juices it affords being watery and deficient in the saccharine principle, yielding in crystallization a dark-coloured sugar." The cane demands a fertile soil; and there is no plant in the cultivation of which manuring should be carried to a greater extent. A succession of crops is adopted by the best cultivators; and yams, arrow root, or other plants cultivated for man or cattle, not gramineous, intervene with the cane. Burning of lands, as a species of manuring, is carried to a blamable extent in some parts of the island. Irrigation is extensively employed on some estates. In the common practice of planting the cane, "parallel trenches are dug, little more than six inches in depth, and the same in breadth; a hard bank being left on each side, on which the earth removed from the trench is raised. The defect of this system is, that only a slight depth of soil is brought into cultivation; whilst the hard ridge left on each side of the cane-hole must give a very limited space for the developement of the roots, and consequently restrict the plant in its supply of nourishment." A better plan is, previously to digging the trenches, to turn over the whole surface with the plough. The cuttings of the cane are planted in the bottom of the trench or pit. The pits or plants are placed at distances proportionate to the richness of the soil, and the moisture of the climate; but the range of this distance is not mentioned. The top of the stalk is generally employed as a cutting, being otherwise useless. The writer of this paper, Dr. Macfadyen of Jamaica, suggests the idea of taking a cutting from the centre of the stem where the juices are richest, with a view to obtaining a plant of more vigorous growth. The young plants are earthed up as they grow, and in 14 or 16 months it is fit to cut over for the first time. The suckers or ratoons which form the succeeding crops require a less time to arrive at perfection, and are generally cut at from 10 to 12 months. How long a plantation lasts is not mentioned, and indeed the article is by no means so complete as it should be. The editor has added, from Dr. Ure's *Chemistry*, an account of the processes employed for the production of sugar from the cane. — *Monoclea crispata*; *Cryptogamia Hepaticæ*. This liverwort grows in small tufts on the branches of trees in the Island of St. Vincent, and was sent thence to Dr. Hooker by our correspondent the Rev. Lansdown Guilding. — *Sinapis frutescens*. A shrubby weak entangled-branched shrub, hanging down on the face of rocks in the Island of Madeira. Sent to Dr. Hooker by the Rev. R. T. Lowe. — *Weissia reticulata*; *Cryptogamia Musci*. A moss from the Cape. — *Guildingia psidioides*; 10 and 11, and *Memecyleæ*. A shrub from the Island of Martinique, approaching in character to one of the *Myrtacæ*. — *Phascum tetragonum*; *Cryp. Musci*. A very interesting little African moss from the Cape of Good Hope. — *Draba*

alyssoides; Crucifera. From the Andes of South America, and probably the largest species of *Draba* which exists. — *Parmelia enteromorpha*; Cryp-
Lichenes. A lichen found on the branches in the western parts of North
 America, by Menzies, Douglas, and others. — *Poinciana Gilliesii*; Legumi-
 nosae *Cuscutaceae*. A beautiful shrub from the neighbourhood of Quinto
 and Mendoza in South America. "The flowers have a sickly disagreeable
 smell, and are supposed by the common people to be injurious to the sight.
 Hence its vernacular name 'Mal de Ojos.'" — *Neckera Douglasii*; Cryp-
Musci. A moss growing on rocks and trunks of trees near the Columbia
 River. — *Grimmia crispata*; C. *Musci*. A moss from the Cape of Good
 Hope. — *Atrypa rhomboides*; Solanaceae. From the neighbourhood of
 Buenos Ayres. — *Brachymenium pulchrum*; C. *Musci*. A South African
 moss. — *Colliguaja* (from *Colliguay*, the native name) *integerrima*, *salici-*
folia, and *odorifera*; *Euphorbiaceae*. Three shrubs from North America,
 of which little is known. — *Gymnostomum Wilsoni*; C. *Musci*. Found
 in Cheshire and Forfarshire. — *Lemna gibba*. The seeds of the different
 species of *Lemna* are so minute, that it is extremely difficult, if not impos-
 sible, to comprehend their structure satisfactorily, and germination alone
 can teach the true nature of the different parts. Mr. Wilson of Warring-
 ton, in 1827 and 1828, paid the most patient attention to the develop-
 ment of the seeds of *Lemna*. He preserved them through the winter in a
 dry state, and exposed a few of them to germinate in March and April,
 finding the beginning of the last month the most favourable period. The
 account is exceedingly interesting, and we shall give it in Mr. Wilson's own
 words:—

"Germination of the Seeds of *Lemna gibba*. When the seeds have
 been macerated for five or six days, they imbibe sufficient water to enable
 them to sink to the bottom: previously to this they swim on the surface,
 and, when almost ready to descend, the upper end of the seed, from which
 the embryo bursts forth, is turned downwards.

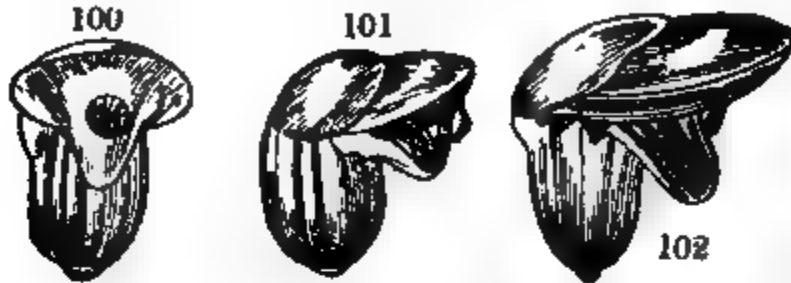
"After lying at the bottom a few days, the embryo expands, and bursts
 the inner coat of the seed, elevating its upper portion, which is always
 circular, with a small rather thick *umbo* at its centre. I term this part the
scutellum, as it seems destined to protect the embryo from injury while
 breaking through the external covering, which is of a rather firm texture,
 though much thinner in the part intended for the transmission of the embryo
 than it is elsewhere. Between this part and the apex of the inner coat of
 the seed there is at first a considerable vacancy; and it is only
 after the rupture of the inner coat that the embryo is sufficiently
 swelled to arrive at the outer barrier, and force open a passage.
 (fig. 95.) At the time when that is accomplished the embryo
 becomes visible, bearing on its summit the scutellum, firmly at-
 tached, by its centre only, to the lower lip of the *cotyledon*, and
 also covering, with a portion of its circumference, the upper one;
 which, however, very soon forces the scutellum aside, and projects
 beyond it. The cotyledon, at first erect, now takes an oblique direction,
 and ultimately an horizontal one (fig. 96.); and soon after its appear-
 ance the seed rises to the surface of the water.



When the embryo was a little more advanced,
 and the removal of the coats
 of the seed (fig. 97. a) ef-
 fected (fig. 98.), the inner
 coat of the seed, the scu-
 tellum or upper portion
 separating from the lower
 part at a circular fissure,
 then appears to view.
 (fig. 99. a)

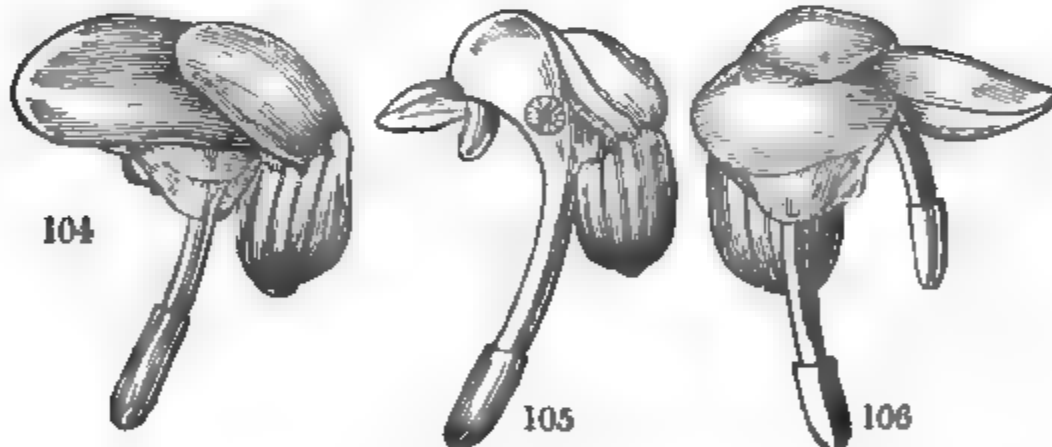
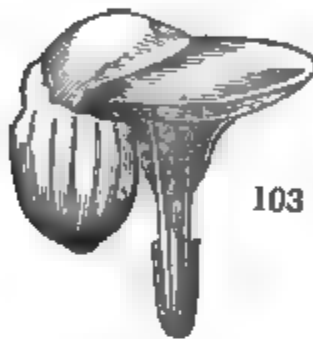


When the plantule, hitherto concealed, begins to extend its disc beyond the lips of the cotyledon, passing over the scutellum, and projecting far beyond it, the spur of the plantule, seated within the cavity (fig. 97. a) of the

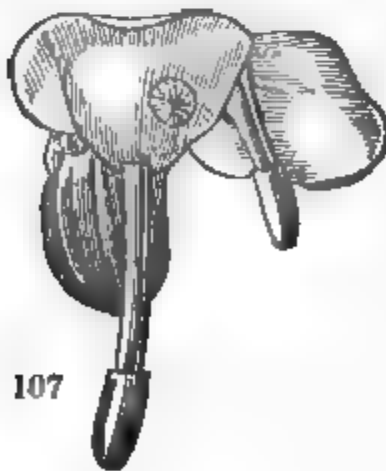


lower lip, also grows larger; and its gradual development is marked by a continually increasing prominence just below the scutellum (figs. 100, 101, and 102.), in the middle

of the lower lip, which is at length pierced (fig. 103.), and the spur becomes the root of the now almost erect plantule. The root bears at its extremity a sheath, not formed of a portion of the lower lip, as I once erroneously supposed, but precisely similar to that found on the roots of the parent plants or innovations afterwards produced. (figs. 103, 104, 105, 106, and 107.) The root continues to grow until it is about six times as long as the seed (sometimes it remains very short); and the lower portion of the embryo within the integuments of the seed now swells, and becoming slightly bulbous at its extremity, is securely retained within them. An innovation, or secondary plant, from one or other of the sides

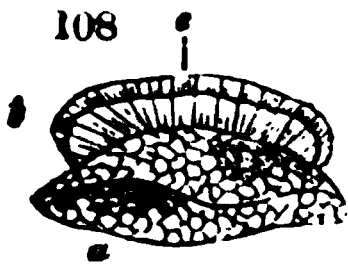


of the plantule (figs. 104, 106, and 107.), near the insertion of the root, now makes its appearance. (I do not remember to have seen an instance in which there was one on each side of the same plantule, though I have frequently seen a second innovation afterwards arise close to the first.) Its development is exactly similar to those subsequently produced; and the spur or root does not pierce any portion of the plantule, but slips from the lower margin of the fissure, which has the same appearance as the (so termed) calyx in the fertile plant. This secondary plant usually bears two innovations on each side; and at the time when the plantule has thus given birth to a race of grandchildren, viviparously produced, the cotyledon remains attached to the whole, without any symptoms of decay, and the integuments of the seed are still retained unaltered by the lower portion of the embryo. At this stage the plantule appears to be destitute

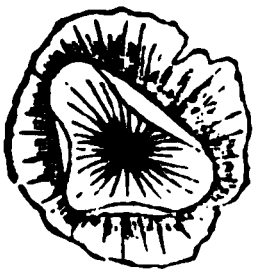


of gibbosity on its lower surface, but the secondary frond is slightly convex below, and the tertiary ones still more so.

"The scutellum, it must be observed, has always a greater diameter than the orifice of the lower portion of the inner coat of the seed. This puzzled me at first; and it was only after a very careful dissection that I ascertained the fact of the inner coat being formed of three distinct skins (fig. 108. *a b c*), and that the scutellum is formed of different proportions of each; the



109



110



inner one (*a*) being the largest, and the middle one (*b*) the smallest of the three. They are all of a circular figure, and the fissure in each of the skins is differently situated. In one instance I found the scutellum, after the expansion of the embryo, not wholly detached from the lower portion of the inner coat of the seed, and entirely separated from the lip of the cotyledon, except perhaps the inner reticulated portion, which I have reason to think was carried up with the cotyledon.

"Fig. 109., the two upper coats, or skins of the scutellum, detached from the lowest one. Fig. 110., the inner or lower coat of the scutellum, showing its reticulated structure."

A species of the genus *Collètia*, *Rhámncæ*; one of *Verbèna*; and one of the genus *Macræ'a* (James Macrae, a collector of the Horticultural Society in the Brazils, now curator of the botanic garden at Ceylon), are defined or remarked on in three articles, which do not afford any thing suitable for quotation. — A Sketch of a Journey to the Rocky Mountains, and to the Columbia River, in North America; by Thomas Drummond, Assistant Naturalist to the second Land Arctic Expedition, under the command of Captain Sir John Franklin, R. N. This is the longest article in the book; and, to a naturalist, will well repay perusal. It chiefly enumerates the plants and animals which were met with, saying little of minerals or the weather, of general scenery, impressions on the mind, or personal adventure. Perhaps, indeed, there is as much of the last as it would be proper to admit in a scientific relation. For the benefit of gardeners who may become collectors, we quote the following: —

"The plan I pursued for collecting was as follows: — When the boats stopped to breakfast, I immediately went on shore with my vasculum, proceeding along the banks of the river, and making short excursions into the interior; taking care, however, to join the boats, if possible, at their encampment for the night. After supper, I commenced laying down the plants gathered in the day's excursion; changed and dried the papers of those collected previously; which operation generally occupied me till day-break, when the boats started. I then went on board, and slept till the breakfast hour, when I landed and proceeded as before. Thus I continued daily until we reached Edmonton House, a distance of about 400 miles; the vegetation having preserved much the same character all the way."

The woody country between Edmonton House and the Rocky Mountains consists of *Pópulus balsamífera* and *P. trépida*, the white spruce fir, the birch with *Pínus Banksiàna* in drier situations, and *P. nigra* and *microcárpa* in swamps. *A'rbutus alpina* and *Dryas Drummondii* gave the first indications of the mountains. The *A'rbutus Uva-úrsi*, mixed sometimes with *Juníperus prostrátus*, thickly covered the dry arid sides of the low hills. On the Red Deer River a species of *Víscum* was found growing on the *Pínus Banksiàna*, and giving the branches of that tree a most curious appearance. An interesting encounter with a white bear is given, and the important information added, from "subsequent experience," that the best mode for a botanist to get rid of bears, when attacked by them, is to rattle

his vasculum, or specimen box, when they immediately decamp. This easy way of driving off so formidable an enemy gives rise to a thousand reflections. How many individuals may have perished from ignorance of this simple fact! The first idea of opposing brutal force is the employment of brutal force; the second, that of stratagem; the last step is the employment of scientific knowledge, or the force of the mind. Most wild animals are frightened by fire; but may there not be some more simple means, and means always at hand for effecting the same object? Cannot the school-master be set to work among the brute creation? Every animal may have some specific action, sound, or smell, which will frighten him? May not a man in Africa one day frighten away the hungry lion by some means as simple as Mr. Drummond employed against the bear? If success be attained with the lion, then, by analogy, it will extend to the tiger, and other animals belonging to the same group. In describing all animals, the mode of frightening, and of enticing them, ought to be given as far as known; and all zoologists ought to pay particular attention to this branch of their subject.

The rise of the waters of brooks and rivers, caused by the melting of the snows, produces inconveniences of which an inexperienced traveller cannot very well form an idea. Mr. Drummond found, after crossing a stream in the morning, that it was so swollen on his return, as to compel him to remain for days a prisoner on the other side, away from books, specimens, and food. The article concludes with a perilous adventure in a boat; and, on the whole, it does much honour to Mr. Drummond.

A succeeding short article informs us that Ledebour's *Illustrations of Russian Plants* is in an advanced state, and will be published at Munich with 500 folio plates. The figures will chiefly represent new plants discovered on the Altaic mountains and their environs.

Remarks on the Botany on the Banks of the Swan River. By Mr. Charles Fraser, Colonial Botanist in New South Wales. The impression made on the mind of Mr. Fraser and his companions was highly favourable; and though the accounts which have since been received are contradictory, and at variance in many particulars, yet, on the whole, we think Mr. Fraser has been correct. Many of the emigrants, from ignorance of botany and country matters, are unable to separate temporary inconveniences from permanent drawbacks to improvement.

Geraniaceæ. By Robert Sweet, F.L.S. &c. In 8vo numbers, monthly. 5s.

No. XXIV. for June, contains

93. to 96. — *Pelargonium fastuosum*. A hybrid, raised at the nursery of Mrs. More, King's Road, Chelsea. — *P. ursinum*. A little bushy plant, raised by Mr. Dennis. — *P. conchyllatum*. A splendid hybrid, raised by Mr. Welsh, though the whole of the stock is in the possession of Messrs. Chandlers of the Vauxhall Nursery. — *P. Drakeæ*, Mrs. Drake's Stork's Bill. A magnificent plant, raised by L. Weltje, Esq., of Hammersmith, and named in compliment to Mrs. Tyrwhit Drake of Amersham.

No. XXV. for July, contains

97. to 100. — *Pelargonium pallidulum*. A fine stout-growing plant, raised by Mrs. More. — *P. staphysagrioides*. One of the most singular species of the genus. Mr. Sweet says, "Had we seen the plant without flowers, and been asked its name, we should have immediately pronounced it to be *Delphinium Staphysagria*, the foliage and habit being so exactly like it, that we believe it would have deceived the most attentive observer. It was raised from seed, at the nursery of Messrs. Allen and Rogers of the King's Road and Battersea; but how the seed was procured they cannot at present say. We do not believe that it is of hybrid origin, as we know no plants that could produce any thing like it; we therefore suppose it must have been received amongst other seeds from the Cape, which is frequently

the case at nurseries. Plants are raised from seeds; and before they come into flower, the country from which they were imported is quite forgotten. We should expect that all the admirers of this handsome tribe of plants would wish to have so singular a production as the present in their possession, as it appears to be a strong free grower, and a very abundant flowerer, the flowers being produced in panicles; and although not so large as some others, their abundance makes full amends. It will thrive well in a rich light soil; and young cuttings will doubtless root readily." — *P. Atkinsianum*. A pretty little small-leaved citron-scented plant, with pale blush flowers, with a brilliant dark purple patch in the centre. Raised by Mr. J. Atkins, nurseryman, Northampton. — *P. dædaleum*. A hybrid, by Mr. Dennis.

This number completes the fifth, or supplementary, volume of a work which certainly may be described as of unrivalled beauty in its particular line. Whoever wishes to become acquainted with the splendid beauties of this natural order, will find no other work that can at all compare with it in supplying his wants.

The Florist's Guide and Cultivator's Directory, &c. By Robert Sweet, F.L.S. &c. In 8vo Numbers, monthly. 3s. coloured; 2s. plain.

No. XXXVI. for June, contains

141 to 144. — Winifred Tulip. A bybloemen, white, with dark purple. — Lee's Colonel Taylor Auricula. Green-edged; "considered by florists as the finest variety grown." Price 3/. per plant. — Horace Ranunculus. Yellow and brown or purple. — Ford's William of Walworth Pink. Very large, and double; brilliant dark purple, edged with white, and a patch of clear white in the centre of each petal.

No. XXXVII. for July, contains

145 to 148. — Davey's Trafalgar Tulip. White, variegated with dark purple or velvet. — Russell's Incomparable Picotee. White, edged with bright scarlet. — Bonaparte Rose. Intermediate between *Rosa gallica* and *R. centifolia*. — Oliver's Lovely Anne Auricula. White and green, shaded with black, and edged with white. "In the collection of J. P. Burnard, Esq., of Formosa Cottage, Holloway; raised by a person of the name of Oliver."

No. XXXVIII. for August, contains

149 to 152. — Grandee Ranunculus. From the collection of the Rev. J. Tyso. — Louis XVI. Tulip. From the collection of J. Goldham, Esq., of White Cottage, White Conduit Fields. — Forster's King William Pink. From Mr. Hogg's collection. — Lee's Light Blush Rose. From the Fulham nursery.

No. XXXIX. for September, contains

153 to 156. — Pompe Funèbre Tulip. — Greig's Wellington Auricula. — Napoleon Ranunculus. — Hill's Duke of Leed's Carnation.

Medical Botany, &c. By John Stephenson, M.D., and James Morss Churchill, Esq., Surgeon. In 8vo Numbers, monthly. 3s. 6d.

No. XLI. for May, contains

160 to 162. — *Cócculus palmatus*; *Dioëcia Hexándria* and *Menispérmeæ*. This is the Calumba plant of the shops, a native of thick forests on the shores of the east coast of Africa, and lately figured and described in the *Bot. Mag.* by Professor Hooker. Medically, it is a powerful antiseptic and tonic, and is free from that nauseous taste which distinguishes many other bitters. The root of our common *Bryonia dioica*, tinged yellow with tincture of Calumba, and the root of an American plant, *Frasera Walteri* Mich., *Swartzia Fraseri* Smith, are sometimes sold as substitutes for the true Calumba; but the spurious roots give no precipitate with infusion of galls. — *Astragalus créticus*. From this low shrub, which grows plentifully in Candia, Greece,

and many parts of Asia, is procured the gum tragacanth. The gum exudes copiously through natural openings in the bark, to which it adheres and concretes. It is used for various purposes in the arts, and in medicine as a demulcent. — *Smilax Sarsaparilla*; *Dicœcia Hexándria* and *Asparagineæ*. A climbing perennial, native to Mexico, Brazil, and Peru, whence the dried root is imported. It is used in affections of the stomach, rheumatism, scrofula, &c.

No. XLII. for June, contains

163 to 165. — *Amanita* (*a*, intensive, *mainomai*, to madden; intoxicating effects) *muscaria* (*musca*, a fly; killed by its infusion), *Agáricus muscarius* *Lin.* “One of the largest and most beautiful of the agaric tribe; the pileus of a brilliant pink, with white warts; extremely conspicuous, even at a distance, in the shaded recesses of its native woods.” Found in woods generally throughout Britain, and very abundant in those of the Highlands of Scotland. There are two varieties, which, with the *A. semiglobátus*, are generally considered poisonous.

No. XLIII. for July, contains

166 to 169. — *Agáricus bulbosus*. One of the common poisonous native agarics, abounding in woods in the autumnal months. “Poisonous fungi do not in general manifest their action till six or eight hours after they are eaten, and twelve or sixteen occasionally elapse. . . . Although the fungi have generally passed the stomach prior to the manifestation of alarming symptoms, it will be right to excite vomiting as speedily as possible, by a solution of sulphate of zinc or copper; evacuations from the bowels should be immediately produced by stimulating purgative clysters; and as soon as the stomach becomes settled, the intestines should be thoroughly emptied by means of castor or croton oil; perhaps a large dose of spirits of turpentine would be better than either.”

Amanita muscaria is used by the inhabitants of the north-eastern part of Asia “in the same manner as ardent spirits, or wine, to promote intoxication. These fungi are collected in the hottest months, and hung up by a string in the air to dry; some dry of themselves on the ground, and are said to be far more narcotic than those artificially preserved. Small deep-coloured specimens, thickly covered with warts, are also said to be more powerful than those of a larger size and paler colour.

“The usual mode of taking this fungus, is to roll it up like a bolus, and swallow it without chewing, which the Kamtschadales say would disorder the stomach. It is sometimes eaten fresh in soups and sauces, and then loses much of its intoxicating property. When steeped in the juice of the berries of the *Vaccinium uliginosum*, its effects are those of strong wine. One large, or two small fungi, is a common dose to produce a pleasant intoxication for a whole day, particularly if water be drank after it, which augments the narcotic principle. The desired effect comes on, one or two hours after taking the fungus. Giddiness and drunkenness result from the fungus, in the same manner as from wine or spirits. Cheerful emotions of the mind are first produced; involuntary words and actions follow; and, sometimes at least, an entire loss of consciousness. It renders some remarkably active, and proves highly stimulant to muscular exertion; with too large a dose, violent spasmodic effects are produced.

“So very exciting to the nervous system, in some individuals, is this fungus, that the effects are often very ludicrous. If a person under its influence wishes to step over a straw, or small stick, he takes a stride or a jump sufficient to clear the trunk of a tree; a talkative person cannot keep secrets or silence; and one fond of music is perpetually singing.

“The most singular effect of the *Amanita* is the influence it possesses over the urine. It is said that, from time immemorial, the inhabitants have known that the fungus imparts an intoxicating quality to that secretion,

which continues for a considerable time after taking it. For instance, a man moderately intoxicated to-day, will by the next morning have slept himself sober; but (as is the custom) by taking a tea-cup of his urine, he is more powerfully intoxicated than he was the preceding day by the fungus. The intoxicating property of the fungus is capable of being propagated; for every one who partakes of it has his urine similarly affected. Thus, with a very few amanitas, a party of drunkards may keep up the debauch for a week. Dr. Langsdorf mentions, that, by means of the second person taking the urine of the first, the third that of the second, and so on, the intoxication may be propagated through five individuals."

Agáricus semiglobátus. A case is given, in the *London Medical and Physical Journal*, of a family of five persons, who ate champignons which had been stewed with butter, flower, pepper, salt, and water, in an iron vessel, and within ten minutes afterwards felt their spirits exhilarated. In about five hours they were attacked with stupor; in three days one of them died; the day afterwards two more: the mother miscarried; the father barely escaped; and a dog died in great agonies.

"On the Continent a great many kinds of fungi are used for culinary purposes. In this country, very few are regarded by epicures as edible; but Dr. Greville enumerates no fewer than twenty-six species, which grow abundantly in most parts of Britain, that may be eaten with safety. They are the following:—*Tùber cibàrium*, or common truffle; *T. moschàtum* and *T. álbum*, two analogous species; *Amanita cæsarèa* and *aurantiaca*, the oronge of the French, which is often confounded with the *A. muscària*, but may be distinguished from it by the colour of the gills, which in the former species are yellow; *Agáricus prócerus*, *campéstris*, *orèades*, *odórus*, *ebúrneus*, *ulmàrius*, *ostreàtus*, *violàceus*, *piperàtus*, *àcris*, and *deliciòsus*; *Cantharèllus cibàrius*; *Bolètus edùlis*, *scàber*; *Fistulìna hepática*; *Hýdnum repándum*; *Clavària corallòides*, *cinèrea*; *Morchélla esculénta*; *Helvélla mîtra* and *leucophæ'a*. Some of these, however, especially *piperàtus* and *àcris*, have been deemed unwholesome. M. Orfila, in his *Toxicologie Générale*, mentions the following species as decidedly poisonous: *Amanita muscària*, *álba*, *cítrina*, and *víridis*; the *Hypophýllum maculàtum*, *albocítrinum*, *tricuspidàtum*, *sanguíneum*, *crux-militénse*, *pudibúndum*, and *pelítum*; the *Agáricus necàtor*, *àcris*, *piperàtus*, *pyrógalus*, *stípticus*, *annulàris*, and *ùrens*. To these may be added, the *A. semiglobátus*, *bulbòsus*, and probably many others."

Rhús Toxicodéndron, *Rhús radicans* of Hort. Kew. The yellowish milky juice which exudes from the wounds of this plant becomes black with exposure to the atmosphere, and forms one of the most perfect kinds of indelible ink. Applied to linen it does not fade from age, washing, or exposure to common chemical agents. It contains an acrid poison, as does the juice of several other species, *R. pùmillum*, *typhinum*, and *vérnix*. This poison affects different individuals very differently, and on some it has little or no effect. Low diet and purgatives form the treatment recommended. In France it has been used as a medicine. — *Pterocárpus erinàceus*. This is the tree which yields the kino of the materia medica, though the Edinburgh college has inserted kino as the inspissated juice of the *Eucalýptus resinífera*, and the Dublin *Pharmacopæia* as the product of *Butea frondòsa*. The *Pterocárpus* is a native of Senegal, and the kino is obtained from it by incisions made in the trunk and branches. It is principally employed, combined with other astringents, in obstinate chronic diarrhœa, &c.

Pterocárpus santálinus. This is the red saunders tree of the druggists, chiefly used as a colouring matter, like dragon's blood. — *Férula persica*. A hardy perennial, from the Persian mountains, supposed to produce assa-fœtida, though the principal species from which that drug is obtained is the *F. Assafœ'tida*. This gum resin is obtained by cutting over the stem at the collar, when the leaves begin to decay; the juice then exudes, and is scraped off and inspissated by exposure to the air. The assafœtida is em-

ployed as a powerful antispasmodic in many nervous diseases, in dyspepsia, &c. In India it is used by the natives as a specific for the Guinea worm, and to destroy the parasites which infest the rectum.

No. XLIV. for August, contains

170 to 174. — *Dryobalanops Cámphora*; *Guttíferæ*. A lofty tree of Sumatra. "The camphor is found, as already observed, in a solid state, occupying portions of about a foot, or a foot and a half, in the heart of the tree. The natives, in searching for the camphor, make a deep incision in the trunk, about 14 or 18 ft. from the ground, with a billing, or Malay axe; and, when it is discovered, the tree is felled, and cut into junks of a fathom long, in order to allow of the extraction of the crystalline masses.... Camphor is imported into this country in chests and casks, chiefly from Japan, in small granular or friable masses, and is afterwards purified by sublimation, in low flat-bottomed glass vessels, placed in sand for that purpose.... Camphor, or a substance analogous to it, exists in several other vegetables besides the *Laúrus* and *Dryobalanops*; as mint, thyme, marjoram, and many other plants, and is held in solution by the essential oils obtained from them.... There is still some difference of opinion respecting the action of camphor on the animal system: by some it has been regarded as a stimulant; while others have maintained it to possess considerable sedative powers. Its primary operation is that of an excitant, but its stimulant action is not very considerable. In moderate doses it increases the heat of the body, softens and increases the fulness of the pulse, and excites diaphoresis. In a large dose it diminishes the force of the circulation, induces sleep, and sometimes produces delirium, vertigo, convulsions, or coma; effects which are best counteracted by wine and opium."

Quássia Simarûba. A tree of Jamaica, which yields the valuable tonic and astringent bark termed *Simarûba Quássia*. — *Quássia amara*. A shrub of Surinam, named in honour of a negro, Quassi, who, Stedman observes, was a drunken doctor, but had discovered the virtue of the wood in curing the malignant fevers of that hot marshy country. All parts of this shrub are intensely bitter. — *Quássia excélsa*. A tree in Jamaica, the bark of which is used as a tonic. — *Piper nigrum*. A ligneous climbing perennial of the East Indies, where it is extensively cultivated, and supported by living trees, up which it climbs, instead of posts. These trees are most commonly the *Areca* palm, the *Erythrina Indica*, the Mango, and the Jack tree. The plants, or pepper vines, as they are called, begin to bear about the third year, and are in their prime about the seventh; in which state they continue for three or four years, and then decline. Two crops are produced annually, the first in December, the second in July. "As soon as any of the berries redden, the bunch is reckoned fit for gathering, the remainder being generally full grown, although green. When gathered, they are spread on mats in the sun: in this situation they become black and shrivelled; and, as the pepper dries, it is rubbed occasionally between the hands, to separate the grains from the stalks." The pepper countries extend from long. 96° to 115° E., and from lat. 5° to about 12° N. "The pepper of Malabar is esteemed the best; next, that of the east coast of the Gulf of Siam; then follow those of Calantan, Borneo, the coast of Sumatra; and, last of all, the pepper of Rio, which, through the avidity of the cultivators and dealers, is plucked before it is ripe, and hence is hollow and ill coloured. There are two sorts of pepper in commerce. The best black pepper is that which is well garbled and clean, having the stalks, bad grains, and other impurities, taken out, and is denominated heavy pepper; it is the sort usually brought to Europe. This pepper, when dry, assumes a dark appearance, and is called *black* pepper: divested of its external coat, by steeping the grains in water, and afterwards drying them in the sun, rubbing between the hands, and winnowing, it is termed *white* pepper." Pepper yields its virtues to ether and alcohol, and partly to water. Piperin, a new principle

lately discovered in black pepper, bears a considerable analogy to the resins. As a condiment the use of pepper is well known; as a medicine it is given to relieve nausea, check vomiting, &c. *Piper longum* is in no respect materially different from *Piper nigrum*. *P. Cubeba*, the Cubeb or Java Pepper, affords the officinal cubebs, and is a native of Java, Nepal, Sierra Leone, and the Isle of France. Its small round berries are red when ripe, and of a greyish brown when dried. Cubebs are diuretic, and slightly purgative, and are used in India as a grateful condiment, carminative, and stomachic. At one time cubebs had some repute as a specific for gonorrhœa, but at present they are considered of doubtful utility in that disorder. — *Chenopodium olidum*. This is an indigenous annual, readily distinguished from all others of its family by its strong fetid smell, resembling that of putrid fish. This plant was anciently in great repute as an emmenagogue (*en*, in, *mên*, a month, and *agô*, to lead; promoter of menstruation), and is still cultivated at Mitcham, and brought in large quantities to Covent Garden Market, and sold by the herbalists for this purpose. Regular practitioners, supposing that the suppression of this periodical secretion arises from deficiency of action in the uterine vessels, are in the practice of giving tonics or general stimuli; but recently a specific stimulant of the uterus has been discovered. This vegetable substance is the *ergot*, or spurred rye. The editors of *Medical Botany* are also “firmly convinced that the *C. olidum* is possessed of such virtues; and those of our readers who may be inclined to try the inspissated juice or *extract*, in doses of from 5 to 15 grains, given at bed-time, may obtain any quantity of Mr. Barnes, chemist, Brown Street, Bryanston Square, who has prepared several pounds of it. It must be borne in mind, that it does not succeed in plethoric habits, unless they have been reduced by venesection and saline purgatives; nor is its success to be so often expected even then, as in the pale or cachectic patient.”

Rhèum undulatum. Its qualities and uses are the same as those of *R. palmatum*. — *R. compactum*. This is a native of Tartary, frequently substituted for the true rhubarb. — *Wintèra aromática*; *Magnoliæ*. This is a tree of 50 ft. in height, a native of the Straits of Magellan, and its bark was once much celebrated as an antiscorbutic, though now out of use.

The Pomological Magazine. In 8vo Numbers, monthly. 5s. coloured; 3s. 6d. plain.

No. XXXIV. for August, contains

133. *Adams's Pearmain*. Sent to the Horticultural Society by R. Adams, Esq. A most superior fruit; the tree hardy, very healthy, and a particularly free bearer. The fruit is rather large, pearmain-shaped or parabolic, not angular. It is not subject to speck or deformity, is a good keeper, and the proportions of sugar and acid are so intimately blended as to form the most perfect flavour of which the apple is susceptible.

134. *The Ripley Pine*, or Old Ripley. A pine cultivated upon the Ripley estate, in Jamaica, which has in that island the reputation of far surpassing all other sorts. This is not the Ripley pine, but the Ripley queen. The Ripley pine is one of that tribe which gardeners call black pines. It is an excellent variety for winter fruiting, and easily known by the great quantity of mealiness upon the pips.

135. *The Elton Seedling Strawberry*. Raised by Mr. Knight, and found to be a variety of the first class in point of excellence. “It is not too much to say, that it stands upon a level with the celebrated Keen's seedling. It is a healthy hardy sort; it bears most profusely; the fruit is very large and handsome; it ripens so late as to furnish a supply of pine strawberries, to which class it belongs, long after all the other pine-like sorts are over; and, finally, it possesses the great merit of packing well, and of being particularly fit for preserving, a quality of which very few strawberries can

be said to be possessed. All the strawberry-growers who have seen it have been so much struck with it, that there can be no doubt it will soon be among the most common fruits in the market. It comes in after the old pine, Downton and Keen's seedling: it is larger, and a much more abundant bearer than either of the former; and, like the latter, keeps ripening its berries in long succession."

136. *The Cockle Pippin Apple*, Nutmeg Cockle, Nutmeg Pippin, or White Cockle. "A Sussex variety, much valued in the London market for the lateness to which it will keep sound in the spring, as well as for its good qualities otherwise. A pretty good bearer as a standard, but rather apt to canker. Hence it succeeds better upon a Paradise stock, in a sheltered place. It ripens in December. Sometimes the fruit is perfectly smooth, occasionally it becomes russety; and hence the idea has arisen that there are two cockle pippins, the one called the white, and the other the nutmeg. But all gardeners know how apt smooth fruit is to become russety under particular circumstances, and the contrary."

No. XXXV. for September, contains

137. *Franklin's Golden Pippin*, Sudlow's fall pippin. Of American origin, and supposed to have been introduced to England about 1805. An excellent sort, in use in October, November, and December. The true fall pippin is a very different variety.

138. *The Downton Cherry*. Raised by Mr. Knight from a seed either of the Waterloo or Elton, but from which is not certain. Ripe soon after the May duke; bears well as a standard; and, in richness of juice, yields to no cherry of any season.

139. *The Aston Town Pear*. Origin uncertain. An excellent November pear, resembling, in some respects, the swan's egg. "Mr. Knight has truly remarked that it will not come into bearing until six or seven years after the trees have been grafted; and that, like the crassane and the colmar, its wood requires, when pruned, to be left longer than that of pears in general. When it once comes fairly into fruit, it is an excellent bearer as a standard, on which account it is well worth cultivating wherever orchard fruit is wanted. In perfection in the end of October and beginning of November, and then the most delicious of pears."

140. *The Cornish Gilliflower Apple*, the Colville d'Angleterre of Baumann's *Catalogue*. Discovered in a cottage garden, near Truro, about the first year of the present century; and the discovery was considered by the Horticultural Society of so much importance, that the silver medal was awarded to Sir Christopher Hawkins, for his exertions in bringing it into notice. "This is the best apple that is known, if high flavour, combined with a very rich subacid saccharine juice, be the qualities we most desire in fruit; but it is a bad bearer. Its merit is, however, of so decided a character, that no one who is aware of its excellence would wish to be without a tree or two, for the sake of the chance of adding so valuable a variety to his winter dessert. It ripens in November, and will keep till April. The fruit is apt to grow from the extremities of the shoots, which should be remembered in pruning the trees."

Chandler and Booth's Illustrations and Descriptions of Camelliæ, &c. In Imperial 4to Parts, every two Months. 7s. plain; 10s. coloured; and 18s. extra-size.

Part IV. for August, contains

13. *Camélia japonica Wiltòni*, *Lady Wilton's Japanese Camellia*. Raised from seed by Mr. Knight of the Exotic Nursery, about sixteen years ago, probably from a seed of the single red, impregnated with the double striped. A desirable well-marked variety, and distinct from either the double striped, Parks's rose-striped, or the *C. japonica Elphinstòni*. Flowers 2 in. or 2½ in. in diameter, similar to those of the double striped.

14. *Caméllia japonica myrtifolia*. Supposed to have been imported, in 1808, for the Kew garden. The branches are numerous; the flowers freely produced, large in proportion to the size of the plant in the leaves, of a deep rose colour when they first open, but paler when they become expanded. In certain soils, and under different kinds of treatment, this variety is apt to vary a good deal; and hence we hear of the large myrtle-leaved, small myrtle-leaved, and large-flowering myrtle-leaved.

15. *Caméllia japonica fimbriata*, Fringed *double-white* Japanese Camellia. Imported about 1816, but by whom is uncertain. "Mr. Colville, of the King's Road nursery, has the merit of being the first who brought it into notice, and no collection ought to be without it." It resembles the double white, except that the edges of the petals are ciliated or fringed.

16. *Caméllia japonica Chandlèri*, Mr. Chandler's Japanese Camellia. Originated by Mr. Chandler, in the Vauxhall nursery, in 1819, from the seeds of a Waratáh, crossed with the double-striped. Approaches nearer to the Waratáh than to any other variety, and is one of the very best sorts which has been raised.

Loudon, J. C.: Illustrations of Landscape-Gardening and Garden Architecture; or, a Collection of Designs, Original, and Executed, for laying out Country Residences of every degree of Extent, from the Cottage and Farm to the National Palace and Public Park or Garden, Kitchen-Gardens, Flower-Gardens, Arboretums, Shrubberies, Botanic Gardens, Scientific Gardens, Cemeteries, &c., in different Styles, by different Artists, of different Periods and Countries: accompanied by Letterpress Descriptions in English, French, and German. London, Longman and Co., and Charlwood; and Treuttel and Wurtz in London, Paris, and Strasburgh. In atlas folio, with 4 plates and 4 pages of letterpress; quarterly. Price to gardeners, 6s.; retail price, 7s. 6d.

It is the object of the above work to increase the knowledge, and improve the taste, of the amateur and practical gardener, in all that relates to design in gardening. For this purpose it is intended to select and publish plans and descriptions of a number of the principal country residences, parks, pleasure-grounds, and other garden departments, which have been executed in different parts of the world, in different styles, in different times, and by different artists. Public gardens and promenades of every description connected with planting and gardening will also be introduced. With these plans, already executed, will be given at least an equal number of original designs by the editor and by others, garden artists, practical gardeners, or amateurs.

The plans for country residences will comprise examples of every degree of extent, from those of ten or twenty acres to the most extensive demesne; and of every variety of application or purpose, from that of the small proprietor who cultivates his own farm, to the most splendid residence, or public park or promenade. Though all the different styles of design that have been adopted from the time of the Romans to the present day will be exemplified, yet most of the examples will be given in the modern English or natural style, as by far the best suited to the climate and state of civilisation of Europe, America, and the colonies belonging to these countries.

A secondary object in the present work is to promote the introduction in country seats, whether on a small or extensive scale, of botanic flower-gardens and arboretums, arranged according to the Jussieuan or Natural System. The enjoyment derived from flowers, and trees, and shrubs, as at present introduced in flower-gardens and shrubberies, and known merely by their names, and with reference to the Linnean system, is felt to be considerable; but that enjoyment will be greatly increased by knowing them with reference to the natural groups to which they belong. We shall be able to show graphically, in the present work, with what ease flower-gardens

of a very moderate size, and shrubberies not larger than such as are now planted to shelter a kitchen-garden of an acre, or to shelter and decorate a lawn or paddock of an acre or two, may display an epitome, or representative system, of the whole vegetable kingdom. In this way every country residence, however small, may display all the rural elegance hitherto recognised by general observers, with the addition to the naturalist of all that interest which has hitherto been found only in botanic gardens.

But the great object of this work is to cooperate with the *Gardener's Magazine*, and other works which we have already published, and with an *Encyclopædia of Landscape-Gardening* which we intend to publish, in improving the knowledge and maturing the taste of the practical gardener. The study of principles by the perusal of written works, and the experience obtained by the practice of altering grounds from the plans of others, will not alone effect these objects. It is necessary that plans should be copied, studied, compared, and analysed; and that the pencil should be called into exercise by the composition of original plans and designs.

The young gardener further requires to be taught the difference between the possession of knowledge in an art, and the possession of good taste in that art. Many gardeners are competent to design a kitchen-garden or a pleasure-ground, and to delineate their ideas for that purpose on paper; but it does not follow from this that they possess a cultivated or refined taste in this branch of their profession.

As a practical maxim it may be affirmed, that to possess good taste in the productions of any art is, to be able to form a judgment or opinion concerning them in harmony with that of the most enlightened minds. For this purpose a great many objects of art must be seen and compared. But as, from the temporary duration of trees and other materials in use by the landscape-gardener, no less than from geographical distance, the actual productions of different ages and countries cannot be compared together, we must of necessity content ourselves with comparing delineations of them. Such a collection of delineations it has not hitherto been within the power of the practical gardener to compare; and it is the intention of the present work to supply this desideratum.

By studying and carefully copying and comparing the collection of examples which we shall present, in connection with reading and reflecting on what has been written on the subject of gardening, as an art of design, by G. Mason, Wheatly, Price, Allison, and others, (the essence of which we shall embody in our *Encyclopædia of Landscape-Gardening*,) the young gardener may henceforth effect by self-instruction what it was not in his power to do before, he may render himself master of the highest branch of his profession.

As the descriptions accompanying the plans will be translated into the French and German languages, some good will be effected by them in the way of facilitating the intercourse between the gardeners of Continental Europe and those of Britain, America, and Australia; more especially as few of the technical terms of gardening are to be found either in German French, or English dictionaries.

Part I. for October, contains

I. *Elementary Details of Pictorial Map-Drawing.* This sheet is published as a separate work (p. 580.); and therefore those purchasers of the *Illustrations* who do not intend to copy the elementary plate with a view to improve themselves in drawing, may content themselves with the impression they will find here. But whoever wishes to make use of the plate of *Elementary Details* as a drawing-book, should purchase it apart; for, to be copied properly, it requires to be rolled up, which would spoil the sheet as a part of the present work.

II. *Graphic Arrangement of an Arboretum in one extended Line alongside*

of a Walk. The object of this plate is to assist gardeners in arranging trees and shrubs, according to the Natural System, in shrubberies or pleasure-grounds. Every tree and shrub may be here said to be laid down to a scale according to the height it will grow, and the breadth it will occupy, on an average of circumstances. The evergreen proportion of each order is distinctly marked, as are those plants which are climbers, twiners, trailers, or creepers. A list of the orders and tribes, containing all the trees or shrubs that will endure the open air in Great Britain, is given; the number of species (their names can be got from the *Hórtus Británnicus*), classed according to their heights, and each class arranged as deciduous and evergreen. The climbers, twiners, trailers, and creepers are also classed by themselves.

III. and IV. *Design for laying out 100 Acres as a Villa Residence.* By Joshua Major, Landscape-Gardener, Knowstrop, near Leeds. The first of these plates is the working plan of a very ingeniously devised design in the modern style of landscape-gardening. The second is a vertical profile, showing the general effect. Both plans well deserve the study of the practical gardener and the amateur. For the conditions on which this work will be published, and other particulars, we refer to the advertising sheet. We have risked the publication on our own account, and do not intend advertising it any where, except in this Magazine and that of *Natural History*.

Lindley, John, F.R.S. L.S. and G.S., &c., Professor of Botany in the University of London: *An Outline of the First Principles of Botany.* London. 18mo, pp. 106. 3s.

The elements of botany are here laid down in 543 propositions, which form the basis of Mr. Lindley's lectures in the University of London. "No person can be considered a botanist who is unacquainted with the nature of the evidence upon which such of these propositions as are indisputable are founded; or by which it is supposed that others which are less certain can be disproved. Acquiring this kind of knowledge constitutes the study of vegetable comparative anatomy, or organography; a curious and interesting subject, upon which systematic botany entirely depends." To enable the reader to become acquainted with "the evidence," he is referred to Decandolle's *Organographie Végétale*, from which chiefly the "outline" is abridged, or to Link's *Elementa Philosophiæ Botánicæ*. This is a most excellent little work, which every gardener ought to purchase and study as a preparation for Professor Lindley's *Introduction to the Jussieuan System*, just published at 12s. The only objection we have to "An Outline" is the price, which ought not to have exceeded 1s.

Loudon's Hórtus Británnicus: A Catalogue of all the Plants indigenous, cultivated in, or introduced to Britain. Part I. The Linnean Arrangement, in which nearly 30,000 Species are enumerated, with the Systematic Name and Authority, Accentuation, Derivation of Generic Names, literal English of Specific Names, Synonymes Systematic and English of both Genera and Species, Habit, Habitation in the Garden, indigenous Habitation, popular Character, Height, Time of flowering, Colour of the Flower, Mode of Propagation, Soil, Native Country, Year of Introduction, and Reference to Figures; preceded by an Introduction to the Linnean System. Part II. The Jussieuan Arrangement, of nearly 4000 Genera, with an Introduction to the Natural System, and a General Description and History of each Order. Edited by J. C. Loudon, F.L., H., G., and Z.S. London. 8vo. 1l. 1s.

Having reviewed a work bearing the above title in our First Volume (p. 434.), it may here be necessary to state the reason why that work never appeared. It is simply this, that, in preparing the appendix for it, it was

found that the latter would be almost as bulky as the body of the work. Rather than submit such a work to the public, the editor proposed to the proprietors, that, if they would consent to sustain the loss of breaking up the stereotype plates of the first edition, he would superintend a new edition gratuitously. Mr. George Don undertook the Linnean Arrangement of this improved edition, at a price far below its value; and Professor Lindley and Dr. Greville gave their services gratis. In reflecting how the most could be made of a new edition, the happy idea occurred to the editor of giving literal translations of the specific names, and the etymologies of the generic names. From this improvement alone an interest is given to the science of botany that ordinary botanists could scarcely have imagined. Those scientific names hitherto of unknown meaning to all who were not classical scholars, or profound botanical students, will henceforth present to the mind of the humblest English reader a biography or a history, and often both. It would be affectation in us to deny that we think this circumstance and others render our catalogue one of the most important presents hitherto made to the practical gardener.

We are happy, notwithstanding the immense sacrifice of time and labour which it has cost us, to have been the means of placing such a work within their reach. Without meaning to depreciate any other catalogue whatever, we certainly consider this one by far the most perfect work of the kind; and the gardener who does not possess it can never pretend to much either in the way of scientific or practical botany. The Natural Arrangement alone is worth the price of the work. We have given our reasons (Vol. I. p. 435.) for giving the species under the Linnean Arrangement rather than under the Jussieuean: to these reasons we still adhere; but, fortunately for such as may differ from us in opinion on this point, there is the *Hortus Britannicus* of Mr. Sweet, the second edition of which will be ready by the time this notice is published, in which the species are given under the Jussieuean system. These two catalogues do not at all interfere with each other; and whoever can afford it ought to possess them both. The following extracts from our preface indicate the principal points of difference between the books:—

“ Short introductions are given [in Loudon's *Hortus Britannicus*] to the Linnean and Jussieuean systems, illustrated by engravings; and this circumstance, together with the important one of all, the specific names being literally translated, will, by giving the meaning of almost all the terms used in botanical description, in a great measure supersede the necessity of a grammar of botany to the young gardener. The literal translation of the specific names may be considered as, to a certain extent, teaching him the Latin language; and the etymologies of the generic names will give him the meaning of an immense number of Greek words. The species of every genus, where numerous, are subdivided into sections and subsections, which are shortly defined by specific characters; and so copious are the descriptive particulars after each species, that we will venture to assert that, the genus to which any plant belongs being known, the specific name, in a majority of cases, may be discovered by this catalogue without the aid of a *Spécies Plantarum*.

“ In the popular descriptions of the Natural Orders, the medicinal properties and economical uses are slightly noticed; and the soil, propagation, and general treatment of the different groups indicated; so that this part of the work, in our opinion the most valuable collection of botanical facts that has ever been brought into so small a space, may be considered an epitome of the history, uses, and culture of the whole vegetable kingdom. Whoever has a sufficient theoretical and practical knowledge of plants and of vegetable culture to generalise on these subjects, will find, in this Natural Arrangement, the rudiments of every thing that can be said or written on botany, gardening, and agriculture.

“ The literal translation of the specific names, the derivations of the generic names, the indications of derivations, and, above all, the general descriptions of the Natural Orders, will, the editor confidently expects, be found not only of great value in determining the names of plants, and in recognising them at sight, both individually and in masses ; but in assisting the botanical and practical gardener to acquire some knowledge of their structure, physiology, analogies, affinities, properties, uses, and culture.”

We can state all these things respecting this work with the more confidence, since the principal labour and merit belong to George Don and Alexander Rowan, and since we have not, nor can we possibly ever have, the slightest pecuniary interest in its sale.

Loudon, J. C.: Elementary Details of Pictorial Map-Drawing, in 154 Lessons, printed on One Sheet, and explained in English, French, and German, for the Use of British and Continental Working Gardeners. London, Longman and Co., and G. Charlwood ; and Treuttel and Wurtz in London, Paris, and Strasburgh. Price to Gardeners, 3s. ; retail price, 3s. 6d.

The purpose of this work is to show the young gardener and amateur in what manner the different objects which occur in landscape and garden scenery, and especially ground, rocks, trees, water, and buildings, are represented in maps and plans for laying out and improving landed property. The young gardener, by copying them with a black-lead pencil, or simply with pen and ink, will teach himself to draw every object in the field or garden that can be required of him, in the way of laying out parks or pleasure-grounds, or planning gardens.

We strongly recommend this work to every young gardener who is ambitious of drawing plans neatly and on scientific principles. It is unique in its kind ; and we can truly say, that, if we had met with such a work thirty years ago, it would have saved us a good deal of time, some money, and a great many blunders. Whoever looks at the work, and at the price, will see that, though we expect to be paid what we have been out of pocket, yet that we can never expect profit. Had not M. Hertz, one of the cleverest young Germans that we know, volunteered the drawing, we must have charged five shillings instead of three.

Weld, Isaac, Esq., one of the Secretaries of the Royal Dublin Society, and Member of the Royal Irish Academy : An Essay on Evergreen Oaks (*Quercus Flex*), originally published in Trans. Roy. Dub. Soc. Dublin. 8vo.

Mr. Weld's remarks on the evergreen oak are valuable, as they may induce planters to give that tree a place among forest trees more generally than it has hitherto been the fashion to do. The timber is described as being remarkably solid and durable ; and this valuable quality is ascribed to its *slow growth*. Evelyn was, it seems, a strenuous advocate for the *Flex* ; and it is probable that, on his recommendation, the park of Harefield Place in Middlesex, the seat of Sir George Cook, was planted almost entirely with this kind of tree. From the appearance of these plantations they cannot have stood less than a century ; but are far from being so ornamental as it might be expected woods of evergreens would be : the leaves are liable to be tarnished, as well by the summer's sun as by the winter's frost. Their outline is lumpish and heavy, without being picturesque ; and at no season of the year are they ever so interesting to the eye as the cedars of Lebanon, or even the Scotch pines which are sprinkled amongst them. The timber, nevertheless, may be very useful to the turner and machine-maker, and on this account the tree deserves cultivation. The largest specimen in England is at Col. Brereton's, near Chichester. — *J. M.*

M^r Intosh, Charles, C.M.C.H.S., Head Gardener to His Royal Highness Prince Leopold at Claremont, and Author of the “ Practical Gardener

and Modern Horticulturist : " Flora and Pomona, or British Fruit and Flower-Garden ; containing Descriptions of the most valuable and interesting Flowers and Fruits cultivated in the Gardens of Great Britain, with Figures drawn and coloured after Nature ; accompanied by a concise Analysis of their botanical and pomological Character, their Nature, and Mode of Culture ; including a Definition of the Technical Terms used in the Science of Botany, with familiar Instructions for the Drawing and Colouring of Fruits and Flowers. London. 4to and 8vo. Price 1s. 6d. and 2s. 6d. ; or coloured, 2s. and 3s.

The object of the present work seems to be to promote a taste for botany and gardening among amateurs ; and those who have hitherto been accustomed to look at plants in gardens in a cursory and unscientific manner. It contains " a concise though luminous description of the origin, the botanical and pomological character of each fruit and flower, the period of their introduction into this country, with other general and useful observations on their nature and mode of culture, it is intended to give a definition of the scientific terms which may be used in their description." An " original feature " in this work is, " instructions, on easy and scientific principles, for drawing and colouring fruits and flowers, including the requisite directions for properly mixing the colours, and other minutiae." Such are the very laudable objects of this work ; and it remains only to examine how far they have been attained. After looking over the first nine parts, it gives us much pleasure to state that the descriptions and remarks are well calculated to promote the end in view : they are scientific, and, under the direction of so distinguished a gardener as Mr. M'Intosh, and so excellent an artist as Mr. Smith, it is almost needless to add, they are practical. The work is rather too expensive for a young gardener ; nevertheless, we would recommend those of this class who can afford it to purchase one or two coloured parts, as a drawing-book, for the sake of the instructions which are given at the end of each part for drawing and colouring the flowers and fruits contained in it. Parts i. and ii., for example, contain *Cactus Jenkinsoni*, *Calceolaria corymbosa* (improperly printed on the plate with a capital C : capitals in specific names being limited, with regard to adjectives, to such as are derived from names of persons), Green-fleshed Melon, Noblesse Peach, Morello Cherry, and *Gloxinia cauléscens* (misspelt on the plate *cauléssens*). The colouring of the figures is not altogether so well as might be expected from the superintendence of Mr. Smith ; but still the objects are good resemblances of nature, every one of them being taken " from the subject itself, in its highest perfection." On the whole, we can safely recommend the work both to the scientific and practical reader ; and, as we understand it has a very considerable sale, we have pleasure in reflecting that it will do much good. Every one ought to acquire some knowledge of gardening, agriculture, and natural history ; because, though they may never have a garden of their own, this knowledge will greatly enhance their enjoyments when looking at the gardens and farms of others, or travelling generally in the country. To promote the same object, we recommend Mr. M'Intosh to introduce occasionally notices respecting the insects, worms, birds, &c., which infest fruits and flowers ; and it would be easy to give coloured figures of such small objects on the same plate with the fruit or flower, in the manner of Mr. Curtis. The value of the work would be doubled by something of this kind. As it is, however, we strongly recommend it to all who can afford the expense. To all those who are personally acquainted with Mr. M'Intosh, or have had an opportunity of seeing the high order and keeping of every thing under his care at Claremont, the excellent crops in the kitchen-garden, and the great improvements he is making in the shrubbery and pleasure-ground, what we have said of this book, or shall say of any other which may be entirely under his control, will be superfluous.

Catalogue of Flowers, Roots, Plants, &c., sold by Henry Groom, Florist, at Walworth, near London. 1830. 18mo. 6d.

We notice this trifle for the sake of stating that the list of ranunculuses is very well arranged in the manner of Tyso and Woollard, noticed in our last Number. (p. 473.)

Mangold Wurzel [erroneously spelled Mangel Wurtzel]: Report of the Committee of the Doncaster Agricultural Association on the Advantages of Mangold Wurzel as a Fallow Crop. Founded on Returns received in Answer to the Queries issued by the Committee. London, 1830. Pamph. 8vo, pp. 7.

“ The advantages of mangold wurzel are these: — It is more sure to plant, being very little liable to the fly or grub; it will produce more weight; it is off the land earlier; it is useful as a change of fallow crop, when the land is tired of turnips; it will grow on land where turnips cannot be raised; it is better spring food. On the other hand, in favour of Swedish turnips, it may be said, that the weeding and singling out are less expensive; there is rather more time for fallowing in the spring; the succeeding crop is better than after mangold wurzel. Perhaps cattle feed best on Swedish turnips when they are used alone. It must, however, be remarked, that these last two evidences in favour of Swedish turnips are not fully proved, and only partially supported. In conclusion, perhaps two observations may be of use. First, That the very early season at which mangold wurzel should be sown, renders it highly expedient that the land should be made as clean as possible in the autumn, so that a few days in the spring may be sufficient to get it into a proper state for the reception of the seed. Secondly, That wet seasons do not suit mangold wurzel so well as dry; and, consequently, for the last two years, the Swedish turnips have been the more valuable crop of the two.”

ART. III. *Literary Notices.*

THE Genera and Species of Orchideous Plants. By John Lindley, Esq. F.R.S. &c. Part I., *Malaxideæ*, 8vo, 7s., is in an advanced state. This work will consist of about five parts.

The Introduction to the Natural Orders, by the same author, is just published in 1 vol. 8vo. Price 12s.

Arborètum Britànnicum; or, the Description, History, Native Country and Habitation, Uses, Cultivation, Botanical Figures, and characteristic Outlines of all the Trees and Shrubs which will endure the open air in Great Britain. In 1 vol. 8vo. Edited by J. C. Loudon. This work is in preparation by competent persons, under our guidance and inspection, and it will be brought out as early as possible, in order to cooperate with our *Illustrations of Landscape-Gardening*, &c. (see p. 576.), in promoting the diffusion of a greater variety of trees in our useful and ornamental plantations and pleasure-grounds. Besides botanical figures of the principal species, skeleton outlines will be given of the general shape and character of the tree at different ages. In short, though the work will be highly condensed, so as to be sold cheap, yet the subject of hardy trees will be exhausted.

An Encyclopædia of Essential Knowledge for Women of all ranks, forming a comprehensive system of female education in the most extensive sense of the expression; preceded by a general history of female education in all ages and countries. This work, which will appear in separate volumes, is in preparation by a fully competent and well known authoress.

PART III.

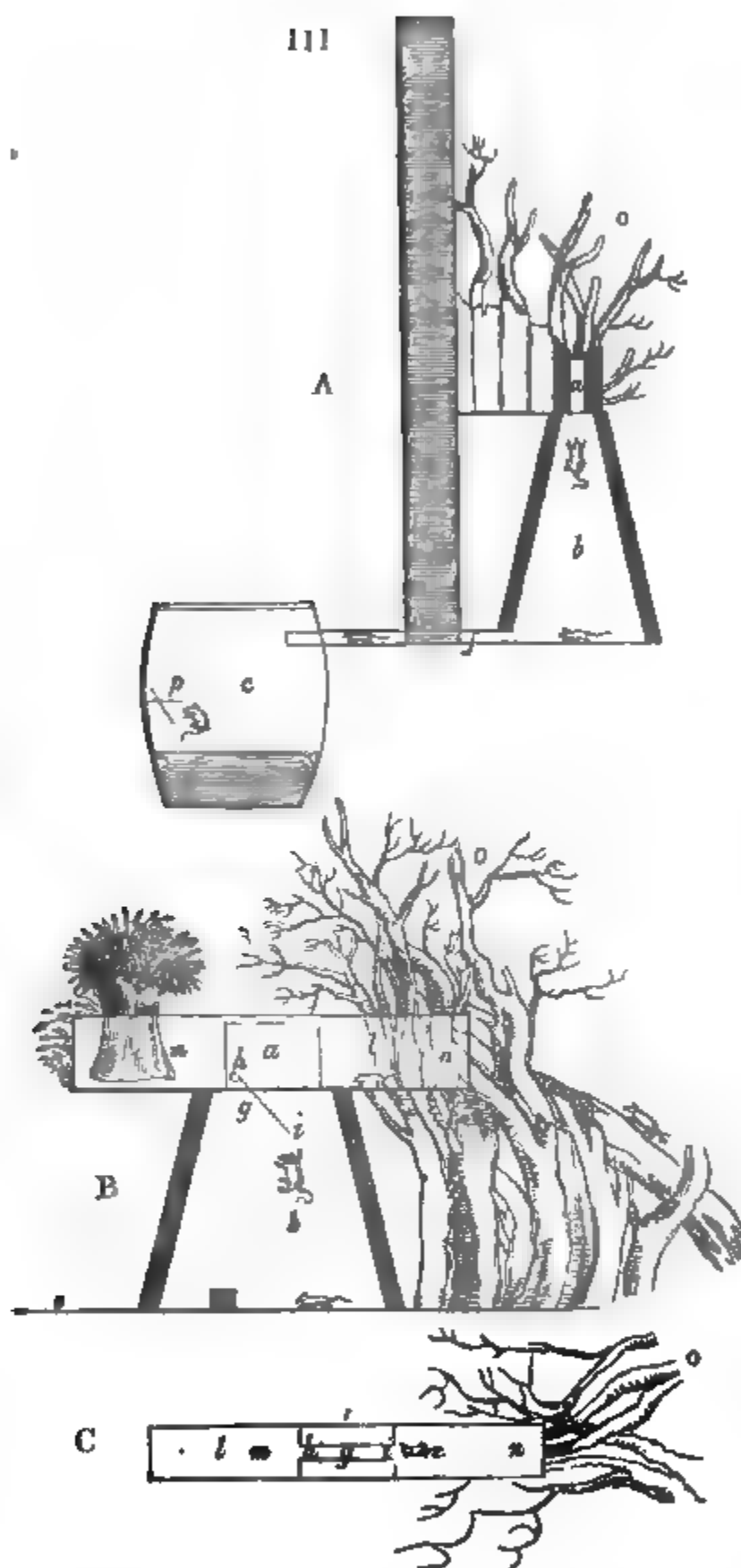
MISCELLANEOUS INTELLIGENCE.

ART. I. *General Notices.*

DESCRIPTION of a Rattery invented by the late Mr. Robert Paul of Starston, Norfolk.—My dear Sir, You were pleased to express yourself so well satisfied with a recent notice of an article by me on Ratcatching (see *Country Times*, No. 18.), that I am willing to hope a more detailed account of the plan therein alluded to may not be unacceptable to you. I shall endeavour to illustrate my meaning by appropriate sketches; which, though not so satisfactory as I could wish (having been merely given from memory), will, I trust, enable you the better to understand my description.

This "Rattery" was, as I have elsewhere stated, invented by my late excellent friend Robert Paul of Starston, in Norfolk. He bestowed much labour and time to bring it to perfection; and, though living in a situation peculiarly favourable for encouraging the breed of rats, used to boast that he had completely subdued them. In fact, I have heard him say that he offered a reward to any one who would bring rats on his premises; and that having marked and turned off one particular pair, he betted a wager that he should soon catch them both; which, in the course of a very few days, he did. He selected, as the site of his rattery, some outhouse where rats were known to frequent, and which he could lock up, and keep sacred to his own devices and operations. Here he fixed his trap, the construction of which will be best understood by referring to the accompanying sketches. (*figs.* 111, 112.) This spot he endeavoured to make as inviting and comfortable to the animals as possible; for which purpose he placed faggots, loose wood, and even straw, with an occasional wheat sheaf, on and about the trap. His plan was, to render the trough (*l*) a complete thoroughfare; for which purpose the trap or falling bottom (*g*) was, for several days, secured by a pin, and the end (*m*) used as a feeding place. After the rats had got accustomed to the spot, and passed the bridge with confidence, he took out the pin which secured it, and every rat that attempted to pass thereafter was taken prisoner. I should here observe, that great care is necessary in the construction of this part of the trap. It is not enough that the floor give way under the rat, and be merely brought back into its place again by the balance weight at the end of the bridge (*h*). One rat might be accidentally so caught, but you would not catch a second. They are, as is well known, remarkably cunning and suspicious in their dispositions; and are in the habit of trying the bridge with their forefeet, in order to ascertain its soundness, previously to adventuring the weight of their bodies thereon.* It is obvious, therefore, that unless the bridge is sufficiently fastened to enable the rat to make this trial, the

* The same precaution is said to be used by elephants in regard to temporary bridges over which they have to pass. They will sound them with their trunks as far as they can reach; and if, in their judgments, they are not sufficiently secure, it is perfectly useless to try to get them over.



The same letters refer to each of the figures.

A, End view of the trap, with the tub (section).

B, Longitudinal section of trap.

C, Birdseye view of longitudinal section of trap.

a, Doubting Castle.

b, Fortorn Hope.

c, Slough of Despond.

d, Partition wall.

e, Ground level.

f, Pipe of brick or tile.

g, Falling floor, or bottom of trap.

h, The weighted end of the fall, to bring it back into its place.

i, The end of the fall, that gives way under the rats.

l, Trough, or thoroughfare, in which the trap (a) is placed.

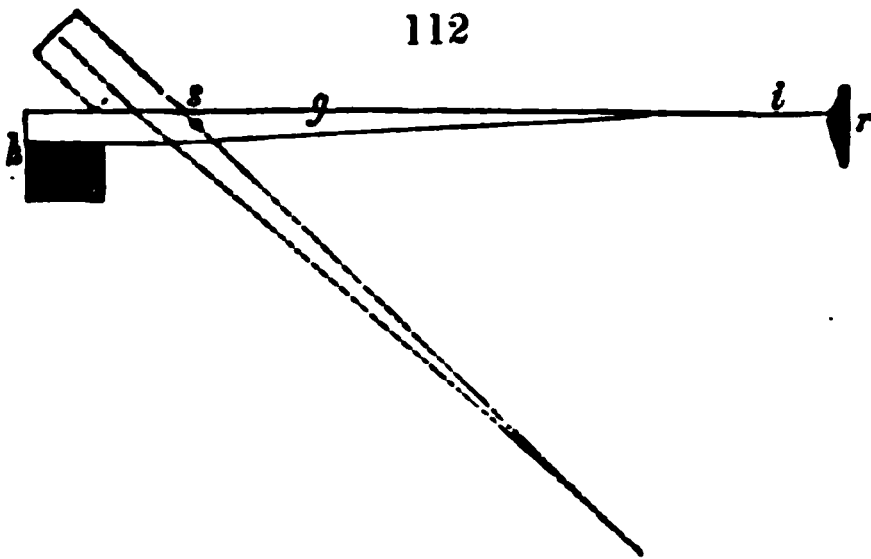
m, The feeding end of the trough.

n, The end at which the rats enter.

o, Loose wood, to serve both as a cover and a road into the trap.

p, A slip of wood, to which the rats spring from the pipe f, and which gives way under them, and lets them into the water below.

trap will be no trap to them; and yet the catch or fastening should not be so stiff but that it will suffer the bridge to give way under their weight when once upon it. I cannot show this catch in my sketches; they are so small, but (enlarging the scale) it is, when the bridge is viewed sideways, something like the following sketch. (fig. 112.) *g* is the bridge or fall of wood tipped with thin sheet iron at the end (*i*), which works into the catch (*r*). This catch should be sufficiently rank to bear the trial already



spoken of; and yet not so rank but that it suffer the bridge to fall when wanted (as shown by the dotted lines *n*). It is brought back by the weight (*h*), and moves on pivots at *s*.

The beauty of this trap is, that, when once set, and the catch (*r*) regulated to its proper pitch, it requires no further trouble. One is sufficient for the whole pre-

mises. The great object is, to give them time enough to get acquainted with it; for which purpose every thing should be done to attract them to the spot, and to make them feel themselves at home. A little pale malt, slightly tintured with oil of caraway, will prove to be the most inviting dish you can set before them; and it will be well to bear in mind, that no part of the trap, not even the straw or the wood by which it is surrounded, ought to be touched by the naked hand without first rubbing the skin with a portion of the oil of caraway. Do not scatter the malt upon the bridge (*g*), but spread it carelessly, as it were, about the feeding end of the trough (*m*). It will thus be in sight from the other end (*n*); and, to get it, the rats must pass the bridge (*g*); for it will be seen at *fig. 2.* that the entrance to the trap is now (by means of the wood piled up) at the end of the trough (*n*), although at first it had an entrance at each end, and was, as I have stated, a complete thoroughfare. Indeed, some have them on this plan still; having no particular feeding place, and trusting entirely to time and chance for what they may catch; having first taken pains to make the trap a *run*, and the place itself a harbour for rats. I do not know that it is requisite for me to add many more words. The drawings sufficiently explain the principle; and as to dimensions, those can be determined by the projector, and must, in some degree, depend on the size and convenience of the building to which the rattery is attached. The trap itself should not be above 3 or 4 inches wide, and 12 or 15 inches long; in order to allow plenty of room for the fall of a large rat. "The forlorn hope" into which he dropped from "doubting castle,"—for, you will observe, my friend had the *Pilgrim's Progress* in his eye when he was thus labouring to entrap sinners,— "the forlorn hope," I say, should be sufficiently deep to prevent the rat from making any attempt to reach the bottom of the trap (*g*); for which purpose it should be of a conical form, and perfectly smooth inside. Once in "the forlorn hope," therefore, he has no means of egress but by the pipe or drain (*f*), the length of which is immaterial, and which conducts to a tub or cistern of water called, not inaptly, "the slough of despond." Against the side of this tub is fixed a flap (*p*), upon which, as the only chance of escape, the rat jumps from the mouth of the pipe (*f*). It gives way under him, as shown by the dotted line, and he soon ends his career in "the slough of despond."

It will be observed, that the operation of this trap is so silent, and yet so effectual, that hundreds may be caught in quick succession without any alarm being given to the remainder; for it appears that they continue but a very short time in "the forlorn hope," leaving it almost immediately for "the slough of despond;" their immersion in which (it being at such a distance from the trap) is unattended with any noise: whereas, had the water been immediately under the fall (*g*), each rat would have occasioned more or less of disturbance, and thus have intimidated many. Besides, the mere examination of the cistern, and taking out the captured, would have been a constant source of annoyance; whereas, in its present situation, it

may be examined every day without in the least interfering with the trap.

I have thus hastily put together the above particulars, which, if thought worthy a place in the Gardener's Magazine, are quite at your service. Before I conclude, however, I will just observe, that my friend had a mouse-trap on the same principle, only on a smaller scale, and of lighter materials, which answered extremely well. The mice dropped through the trap into a little cistern of water beneath. I am, my dear Sir, &c. — *S. Taylor. Country Times Office, 139. Fleet Street, May 20.*

The rapid Generation of Insects, &c. — Sir, I take the liberty of submitting to you an idea which has struck me upon the subject of the very rapid generation of insects in the spring, otherwise called blight; and particularly of those insects called A'phides. It is well known, that in a few days, or even hours, after a certain state of atmosphere has prevailed in the spring, the hop, oak, and various other plants, are covered with them in millions. Some have attributed this appearance to spontaneous generation; others, to the wafting of immense quantities of invisible eggs in the air; others, to electricity; some to one thing, some to another; but I think we may find a solution of this most curious problem in a very striking passage to be found in p. 245. of Huber's book upon ants, and quoted in the *Insect Transformations* (*Library of Entertaining Knowledge*), p. 113. The substance of which is, that in the month of November, while investigating the subterraneous chambers of the yellow ant, he found an assemblage of little eggs for the most part of an ebony colour. They were taken the greatest care of by the emmets. In another hill he found a great number of brown eggs, of which the ants took the same care as the former, never abandoning them. Both kinds were totally unlike the eggs of the ant. "The following day," he says, "I saw one of these eggs open, and an aphid fully formed, having a large trunk, quit it. I knew it to be the puceron of the oak: others were disclosed a few days after, and the greater number in my presence. They set immediately about sucking the juice from some branches of the tree I gave them; and the ants now found within their reach a recompense for their care and attention." The ant-hill was situate at the foot of an oak. "All this," says the Editor of the *Insect Transformations*, "is done by the ants to secure for themselves a supply of the honey-dew secreted by the aphides in the spring." Here, then, we have the whole mystery of blight explained. The aphid eggs are laid up by the ants and protected during the winter. As soon as they are born, they hasten away to the neighbouring plant from which the ant had collected the eggs. They begin immediately to lay their eggs; a season more or less favourable arrives, which is indicated by that appearance in the air which is called a blighting wind, and the eggs are hatched in greater or smaller numbers. The new insect immediately begins to lay its eggs, or to produce its living offspring; and as it is calculated that one aphid may be the progenitor (vide *Insect Transformations*, p. 19.) of 5,904,900,000 descendants during its life, and as there may be twenty generations in a year, it is not to be wondered at that more than 1000 aphides have been counted on a single leaf of the hop, all proceeding from the eggs stored up by the ants for the purpose of securing to themselves a supply of the honey-dew. Should this theory be found to be true, it may by possibility lead to some important practical results, and it is for the purpose of attracting attention to this view of the subject that I address you. We have, then, discovered the store-house of these insects, and whence they come every spring. The question is how to destroy them, or, in other words, how to destroy the ants, their protectors. According to this theory, if we could remove all ants from a hop-garden, or an oak-coppice, we should have no insects in it; we should have no honey-dew on the leaves; and most assuredly the plants would be much more healthy and productive. This would be turning the study of

natural history once more to its real purposes of great utility to man; and I do therefore hope that some of your practical correspondents will give the public information as to the best method of dislodging the various species of ants from our fields, orchards, and gardens: for I cannot help suspecting but that the eggs of the cotton blight, so destructive to our apple-trees, may be preserved in a similar manner.

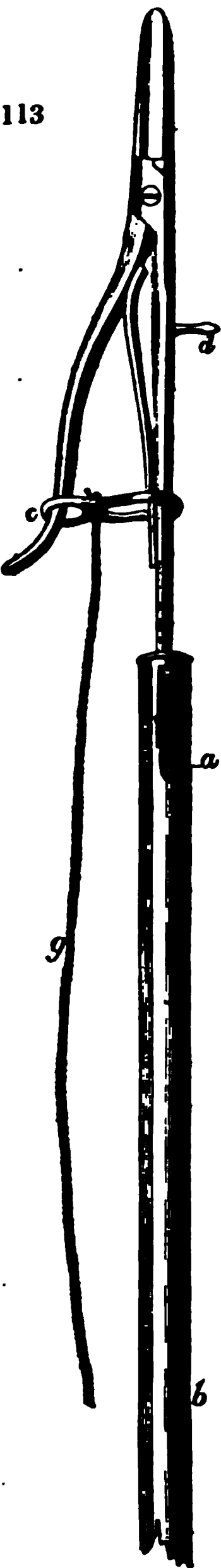
There is a curious article in § 299. of *Cobbett's English Gardener*, on the ant. He maintains they are exceedingly destructive to gardens; and that the only way to destroy them is by pouring boiling water into the nests. I hope you will point out something more practicable in the large way. Yours, &c. — X. Y. Aug. 14.

Remedy for Blight. — A decoction of feverfew and elderberry flowers, applied to the black blight on peach and cherry trees, will effectually destroy the insects and recover the trees. *Probatum est.* — Joseph Tyso. Wallingford, Sept. 1.

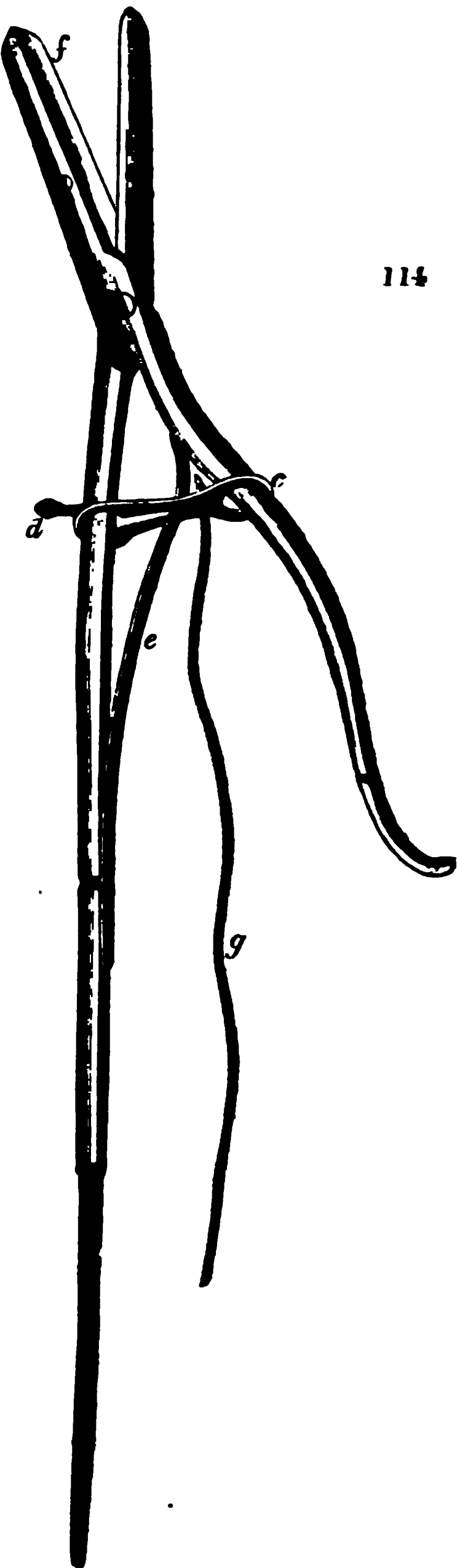
Honesty in Matters of Taste. — “People are afraid to *like* for themselves; and until they can find some other examples of note to countenance them, dare not express their taste. Let all the world know that one man's liking is as good as another's, according to its intenseness. Tutored persons and untutored persons like different things, it is true; and, for that very reason, the untutored person should not adopt the taste of the tutored, because he does not feel it. The contrary practice is the worst of all sorts of hypocrisy. People pretend to like or dislike Mademoiselle Taglioni, for example, or any other object of taste, without the perception of any feeling whatever; or if they find the authorities going one way, they follow the stream, *bongré malgré*, and thus give themselves the pain perhaps of concealing a partiality, in deference to others, who, it may be, excel them only in impudence. Let no man say he either likes or dislikes, without really feeling the corresponding emotion in a manner not to be mistaken. If he is indifferent, let him say so; if he is sensible of a pleasure or a pain, let him not seek a sanction. Let us be honest. As the pain of *pretending* to like or dislike as the wind blows, so is the pain of being afraid to declare your taste whatever it may be. With taste as with opinions, nine-tenths of the world neither form opinions nor feel emotion from objects of taste; why then pretend to do either? We say again, let us be honest; neither let us say, ‘I think,’ when guiltless of thoughts, nor ‘I like,’ when free from all movement of pleasure.” (*Spectator*, July 3.)

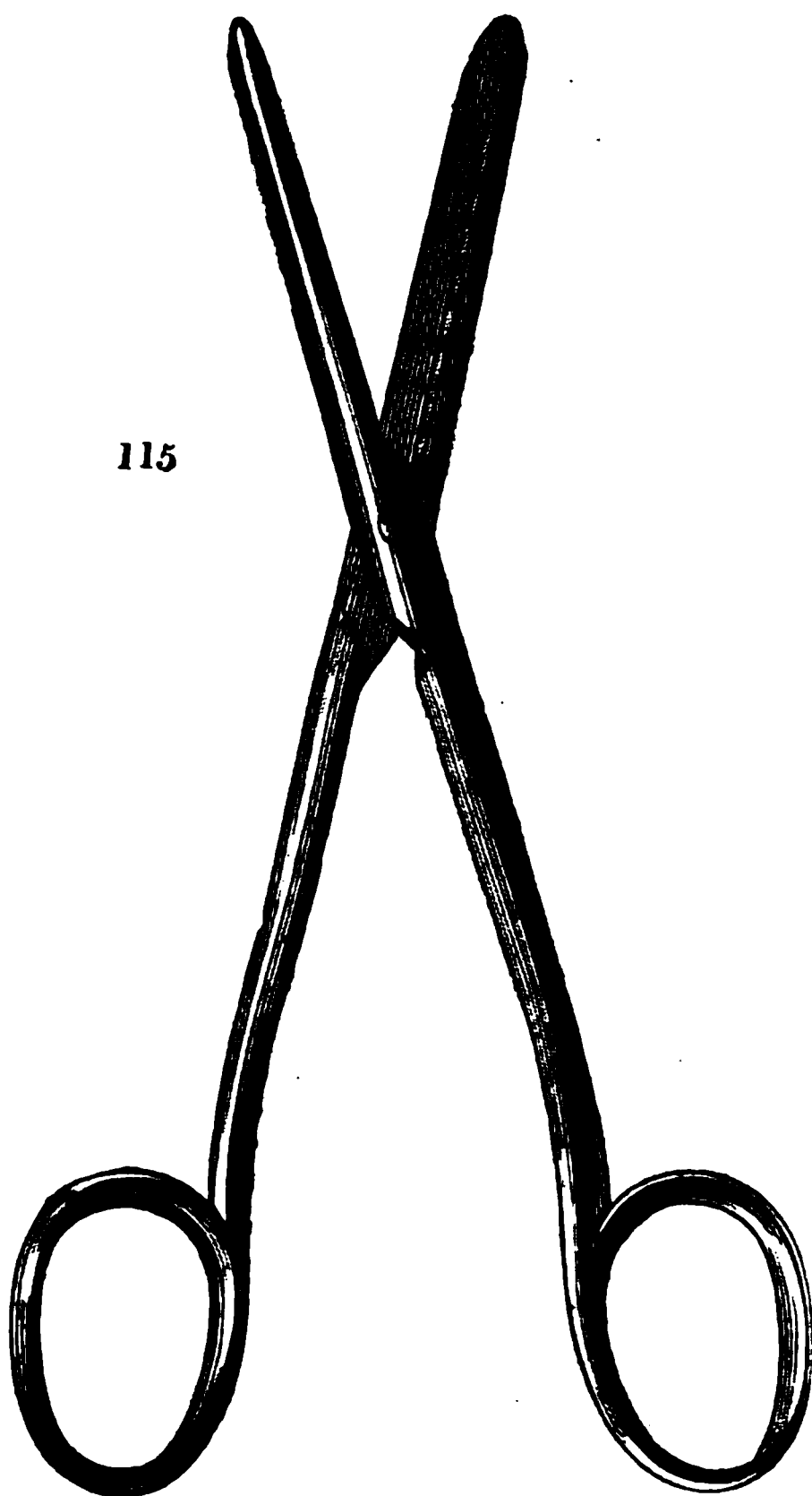
Garden Operations for Ladies. — In our last notice on this subject (p. 312.) we omitted several things; among others, the gathering of flowers or fruits, or the cutting off of decayed or injured leaves from the high trees, from the upper part of green-house stages, from the back or interior parts of beds or borders, or, indeed, wherever the unassisted hand cannot reach. This is to be effected by a very ingenious instrument, invented some years ago, called the flower-gatherer (*figs.* 113, 114, 115.), and, though little known, manufactured for the last seventeen years by Messrs. Steers and Wilkinson of Sheffield. It consists of two parts, the clipping or cutting part, and the handle. The former, by a spring, may be inserted in the latter. The cutting part being formed on the principle of a wire-worker's pliers, cuts and holds at the same time (*f*). The handle is formed of any light wood (*b*). Previously to using the instrument, the iron collar of the cutter (*c*) is moved upwards towards a projecting knob (*d*), in consequence of which the spring (*fig.* 114. *e*) throws the cutting part (*f*) open to receive the leaf, flower, or twig, to be cut. The operation of cutting is performed simply by drawing back the collar (*c*) from its position at *d* by the line *g*. Besides the ordinary operations of gathering flowers and fruits, those of pruning off small twigs and taking off leaves infested by insects from high trees (by the French called *écheniller*, and the instrument an *échenilloir*) may be performed by ladies, and form as good exercise for the arms of the very delicate, as archery for those of the more robust. The handle may be made to any

113



114





convenient length; or handles of different lengths may be prepared, and the instrument inserted in the end of any of the handles at pleasure, and made fast there by a screw pin. The most complete arrangement would be to have it fixed on at the end of a telescope handle, as light as a fishing-rod; and this we have had done by Messrs. Weir of Oxford Street, who have promised to prepare some of them for sale. Messrs. Steers and Wilkinson have also sent us another beautiful lady's instrument, a hand flower-gatherer or berry-gatherer (*fig. 115.*), which is particularly useful for gathering roses and pruning off decayed flower-buds without pricking the fingers or soiling the gloves. It is on the same principle as the other, cutting and holding at the same time. As both these instruments produce crushing cuts, they ought not to be used for the same purposes as the sliding shears, or for cutting off any thing thicker than an eighth of an inch, or at

the utmost a fourth of an inch. With the hand flower-gatherer, and a small basket or pouch tied before her, a lady might with one hand hold her parasol, and with the other cut off and drop into the basket or pouch whatever decayed flowers or withered leaves came in her way. In this manner, also, she might select from the gooseberry bushes and strawberry beds her own dessert. With the handles a little longer, and jointed on the principle of the laz-tommy shears, she might pull up weeds or suckers without stooping: but to do this well would require a little alteration in the cutting part (see *Encyc. of Agr.*, *fig. 254.*), and we should be glad if Messrs. Wilkinson and Steers would bestow their attention on inventing something of this kind. At the same time, we should not recommend the exclusive use of such an instrument, as stooping must be regarded as an exercise. This hand instrument (*fig. 115.*) and the iron part of the flower-gatherer (*fig. 114.*) are made of various lengths, from $4\frac{1}{2}$ to 8 in., and sold by retail at from 3s. to 8s. The expense of the handle to the flower-gatherer (*fig. 113.*) depends on its length and on its construction, and may range from 5s. to 2l. — *Cond.*

Customs in hiring, and Method of paying, Farm Servants in Northumberland. — Single servants, both men and women, are hired by the year and half-year, and are boarded in the farm-house, but the men sleep in an out-

house; the "byre bauks" are most frequently chosen, where they are in the way should any of the cattle be taken ill, &c., should there not be a loft adapted to the purpose. Their food consists of oatmeal, in "crowdy," or "porridge," broth, and butcher's meat; skim milk, cheese, and potatoes. The bread used is made of barley and peas, in the proportion of three to one; it is, in fact, the Scotch "bannocks of barley meal," and is said to be very wholesome, and is far from unpalatable to those accustomed to it. The girls, in addition, are generally allowed Cobbett's abomination, tea, once a day. The wages appear higher than in the southern counties, being, for men, from 5*l.* to 12*l.*; and even where an active industrious young man is employed to act as steward or head man, he will still expect 15*l.* or 16*l.*, if not more. Ploughmen are hired at from five to eight guineas; and it appears not likely there will be any fall in their wages this year. The reason will appear when I detail the conditions of the married servant, or hind: these have, for the year, a cottage-house, coals, bed, a small garth, to set a few early potatoes and cabbage, a cow's grass with straw, and two loads (nearly two tons) of hay for wintering, 3*l.* or 4*l.* in cash, and about twelve or thirteen Berwick bolls of corn (6 imp. bushels): the proportions vary in different districts; but say, one of wheat, two of peas, four of barley, and five of oats; more oats, and less wheat, are given in Tweed side, and the contrary near the Tyne. They have also thirty bushels of potatoes, or, what is more general, have the produce of the setting of two bushels, or 1000 yards of drills; they find the seed and hoe during summer, the master finding the draught-work.* As they are allowed to keep a pig at their own expense, they always contrive to have one bacon pig, if not two, in the year, of which the most careful sell the hams, and consume the bacon at home. When there is a son or father who lives in the same house, this is called a double hind; and the second is hired at proportional wages, either in money or corn, as may be bargained for: they are also required to find for each house a woman, or sufficient lad, for barn-work, turnips, hay, &c., at 8*d.* a day, and in harvest at 1*s.* This is provincially called a "bondager," a name certainly objectionable, yet, to those who will look closely into the custom, it may not appear so bad as at first sight: the fact is, that there are plenty of men who will most thankfully accept of a place under these conditions, rather than run the risk of taking a house in a town or village, and depending on their livelihood for the year upon occasional jobs and piecework. These last are the hands in this country who suffer most in bad times for want of work, and make frequent attempts to throw themselves upon the parish. This winter subscriptions were entered into to employ these persons in the levelling of roads, improvements of footpaths, &c., to prevent such demoralising an effect; and, I am happy to say, were well supported, particularly at Alnwick, as well as a soup kitchen, and ladies' clothing society. The shepherds are also paid in kind: the payment for a man is the keep of two cows and forty sheep. These go with the master's "hirsell" of different ages: where the master herd has to find a man or two, he hires them, and is allowed stock in proportion; so that he has nearly as much interest in the stock as his master, and, his all being at stake, he is as

* I find the practice of setting potatoes by the acre is also used in Scotland: a manufacturer from Galashiels tells me he has known it there for several years back. The price charged at Alnwick is 6*l.* without manure, and 10*l.* or 11*l.* with it: it requires from ten to twelve bolls per acre for seed, and the produce may average about twenty bolls for one of seed; the taker therefore calculates upon having his potatoes at about 9*d.* or 1*s.* per boll (of two heaped imperial bushels), exclusive of hoeing, which is done at spare times, and does not cost much.

much upon the alert in a storm or lambing season as can be desired. They mow and make their own hay, and, where coals are difficult to get, also cut and win, or dry, their peat, and carry these home; the master herd is therefore frequently allowed a horse. They all contrive to have a patch of land, planted with potatoes, which is the only vegetable, except a few cabbages, they cultivate.

When amongst some of our herds on the hills adjoining Cheviot, I made enquiries respecting the use of peat as fuel; I find they all prefer coal when within reach; they estimate nearly ten loads of peat for one of coal in use, therefore, the expense of carriage and winning, or drying, becomes serious, even at a small sum per load. I find the winning is a tedious process, requiring some weeks of dry weather; in the first stage, if much rain fall, the peats are rendered entirely useless. Might not a powerful press be advantageously employed to press the water out, save all the labour of turning, heaping, &c., in drying, and improve the quality of the fuel, by rendering it in substance more like coal? Turves are also sometimes used; but, laying bare a large space of swarth, the practice is objected to by the farmers. To enable you to compare, I may state that our best coal, Shilbottle, is nearly equal to the best Tyne side, and is sold at 5s. for four corves, a two-horse cart-load of about 16 cwt.; and a family will require about five or six of these in the year; inferior in proportional quantities.

As I have said before, there are hands that live in towns and villages who work by the day, or take piece-work in dyking, draining, &c., and hire themselves for a month or two in harvest. When the cottage is in a village, and in the hands of the farmer, he sublets it for a small sum in money, but stipulates for reapers at low wages; this enables him to get his corn cut down with ease and expedition by the bondagers. Where a sufficient number of hands cannot be had in this way, and when the farm is within reach of a populous village or town, reapers are hired by the day; but, what is mostly preferred, Irish reapers are hired by the week, victualled and lodged upon the farm. These last work two or three hours more each day, and cut the corn better.

It has been said that the Northumberland hind is the happiest of labourers, and never feels a bad season. I believe so: his wages are certain, and, with frugality and care, his wife may bring up a large family upon this income. The reverse is sometimes the case; but this is attributed to a bad wife, who wastes the produce of the cow. The bondager certainly rather presses upon the hind when his wife has a young child, and cannot work; he then hires a girl: but in turnip districts, where they are certain of plenty of working days, turnip-hoeing brings in more money than almost any thing a woman can work at (the low price of manufactured goods having completely broken up all our domestic manufactures). The low wages induce the master to give plenty of work; and the certainty of having workers always at command induces him to extend the cultivation of crops, which require hand labour, much further than he would otherwise do. The small stock of the hind being always his own, and the cow generally so, makes him prudent and careful during single service to save as much of his wages as will set him up for himself. To this, and the fact that the wages of labour are never paid out of the poor's rate, the enviable state of the Northumbrian labourers is, in my opinion, to be attributed. It appears to operate as a preventive check upon population, and beautifully illustrates Mr. Malthus's theory; or, in the words of Burns, it teaches them to

“ Know, prudent cautious *self-control*
Is wisdom's root.”

They are all anxious to give their children such education as they can command. When they are within the reach of a charity school they thank-

fully avail themselves of it, and we find in every hamlet some person who teaches the younger children the rudiments; and several of these, when they get older, work and save the wages of summer to pay for putting themselves to schools in winter. — *J. C.* April 24.

The Right of Property itself is subservient to the general welfare; and that welfare is clearly not promoted by a distribution of property which confers princely wealth on a few, and condemns the industrious multitude, by whom that wealth is fabricated, to the alternative of hopeless toil or abject pauperism. (*Quarterly Review*, May, 1830, p. 277.)

Corn Laws and Tithes. — Corn laws are quackery; and tithes are partly a burden on the industry of the country, and partly a deduction from the landlords. It is well that those who delight in seeing the church of England lifting up her mitred front should know who pay the seven millions required for that purpose. (*Morning Chronicle*, March 20.) Q. Do not the landlords pay the tithes? A. No more than a man pays what was left to his brothers and sisters by their common father. A man cannot be said to pay what he never had. If tithes were abolished, they might fall to the landlord; and if a man's brothers and sisters were out of the way, he might be heir to the whole of his father's estate. But this does not make a man pay what is held by others by a right coeval with his own. (*Catechism on the Corn Laws*.)

The Erinus alpinus on old Walls, &c. — Sir, In speaking of the Kensington nursery (p. 382.) you say, "We notice it at present for the sake of calling attention to the *Erinus alpinus*, which has taken possession of the tops of the hot-houses and brick walls, and is now beautifully in bloom in sheets of purplish red, and affords a fine hint for ornamenting walls and ruins in the country." When I first visited Messrs. Malcolm's nursery, now about sixteen or seventeen years ago, the *Erinus*, as above described, was in full beauty; and I was so struck with its luxuriance, and the peculiarity of the situation, that I immediately took the hint, and established the plant on the brick walls of my own green-house, where it has grown and thrived ever since, with greater vigour and beauty than I have ever observed it elsewhere, with the single exception of the Kensington nursery. It has the advantage too, when once established in such situations, of maintaining and propagating itself freely without the slightest care or attention; whereas, when kept in pots, on rock-work, or in the borders, the plants are very apt to die, or, at least, to dwindle, after flowering, and require to be constantly renewed. I would therefore strongly recommend all admirers of this little alpine beauty to adopt the same method of cultivation, by sprinkling the seed into the crevices of walls, &c. Almost any old wall, especially if it be damp and moss-grown, will answer the purpose. Yours, &c. — *W. T. Bree.* Allesley Rectory, June 21.

ART. II. *Foreign Notices.*

HOLLAND AND THE NETHERLANDS.

HAARLEM, June 13. 1829.—Sir, In my tour back to my dear native town, I passed from London through Haarlem, a favourite place of mine, where I once stopped eight months, and where I now found the tulips which I planted last autumn dropping their flowers.

The principal thing I looked for here was the difference between the Dutch and English modes of forcing; and really they are as dissimilar in oper-

ation as they are similar in effecting their object. The Dutch force with dung, the English with fire heat ; and both have their advantages. To give an idea of Dutch forcing, I may mention a place near Haarlem, called *Bashenhoven*, which is pretty extensive. The forcing-houses consist of about 100 lights, and the forcing-pits of 200 lights. A Montagne peach tree, which occupied the breadth of two lights of a pit, was charged (June 2.), with fifty-two beautiful nearly ripe fruits. One melon plant, called the *Groote Orange*, had seven very fine nearly ripe fruit, all of a good size. Out of a cucumber pit of four lights were cut forty fruits on May 28th, and twenty on May 31st. The vines bear well, and a quantity of fruit was already used. Of strawberries, the fine English sorts are wanting, and only the oldest sorts are used in forcing. Peaches, nectarines, apricots, grapes, raspberries, melons, cucumbers, salad, carrots, peas, and French beans are very generally forced. As I saw many similar forcing-houses last year, I may observe that all of them are kept in perfect good order, and managed in one and the same way, so that nothing farther of novelty is to be found, after having seen one of the principal places. The pine-plants, compared with the English, are exceedingly poor.

I like the Dutch manner of forcing very well because it is less expensive ; but where the enjoyment of a fine sight is desired, the English style is preferable.

With respect to the florists' gardens of Haarlem, I cannot give a better description, than by subjoining the following abridged list of the bulbs cultivated in the establishment of M. E. H. Krelage, which was commenced twenty years ago, and must now be acknowledged as one of the best gardens of its kind. M. Krelage is a very enthusiastic florist, who collects all that is fine and new, and has raised since the year 1818, about 300 new varieties of hyacinths from seeds, for one of which, flowering for the second time this year, 100*l.* was offered ; but none of them can be sold before they are propagated. I had the good fortune to learn a good deal about the culture of bulbs from M. Krelage ; and I may remark, that last year, when the tulips in most places looked very ill, they had grown here as well as ever ; and so it is with the whole collection.

Specification of the Bulbs cultivated by M. E. H. Krelage, Florist, Kleine Houtweg, No. 146. Haarlem.

DOUBLE HYACINTHS.

Sorts.			Sorts.			Sorts.		
Reds	-	- 20	Whites with yellow	14	Dark blues	-	-	24
Light reds	-	- 60	Yellow	-	12	Blues	-	- 55
Rose	-	- 65	Whites with red	-	42	Light blues	-	- 45
Whites	-	- 60						

SINGLE HYACINTHS.

Sorts.			Sorts.			Sorts.		
Reds	-	- 27	Whites	-	- 36	Dark blues	-	- 15
Light reds	-	- 30	Yellows	-	- 40	Light blues	-	- 18
Roses	-	- 25	Dark, nearly black	-	6	Blues	-	- 20

Double hyacinths - 397 sorts.
 Single - - - 217
 New varieties - 300

914 occupying 6000 sq. ft. Rhenish.

Under the new varieties a double blue, a double red, a single blue, and a single black are distinguished.

FINE LATE TULIPS.

<i>Bybloemens.</i>	Sorts.	Yellow, with brown	- 106
White, with black	- 65	Yellow, with violet	- 30
White, with brown	- 66	Yellow, with red	- 40
White, with rose	- 70	Yellow, with orange	- 24
White, with red or cherry	- 75	Yellow, with feuillemort	- 20
White, with violet	- 125	<i>Seedlings.</i>	
<i>Bizards.</i>		Whites or bybloemens	- 60
Yellow, with black	- 60	Yellows or bizards	- 16
Bybloemens	- 401 sorts.		
Bizards	- 280		
Seedlings	- 76		

757 occupying 950 sq. ft. Rhenish.

Under the bybloemens are very remarkable: *Louis XVI.*, *Ambassadeur d'Hollande*, *Grand Monarque*, *Violet 81*, *Violet St. Antoine*, *Cerise Incomparable*, *General Worrenzoff*, *Hoogerbert*, *Grotius*, *Roi de Siam*, *Incomparable Mère brune*, *Gouverneur Générale*, *L'Impératrice de Maroc*, *Cramoisi No. 16.*, *Reine des Maures*, *Reine du Monde*, *Rose camure de Grecque*, *Cerise belle Forme*, *Toilette de la Reine*, *Cerise blanche*, *Comte de Versanes*, *Globertine*, *Queen of England*, *Ornement du Parc*, *Rose tendre*, *Reine des Roses*, &c. &c.

Under the bizards are remarkable: *Pompe funèbre*, *Catafalque*, *Castrum Dolorum*, *Charbonier*, *Ne plus ultra*, *Gloria Mundi*, *Bruin Casteel*, *Déesse Flora*, *Gordianus*, *la Delphine noir*, *Grand Maitre*, *Beauté suprême*, *Bienfait*, *Sans Rival*, *Marmoisie*, *Charbonnier noir*.

EARLY TULIPS FOR FORCING.

	Sorts.		Sorts.
Yellow, with red	- 46	Whites, with violet	- 36
Whites, with red	- 30	Whites	- 6
Whites, with rose	- 16	Reds	- 18

DOUBLE TULIPS.

	Sorts.		Sorts.
Yellow, with red	- 24	Whites, with violet	- 18
Yellow	- 8	Whites, with red	- 16
Yellow, with brown	- 16	Whites, with rose	- 12
Whites	- 3	Reds	- 20

Early Tulips	- 152 sorts.
Double Tulips	- 117
Monstrous	- 5

274 occupying 850 sq. ft. Rhenish.

	Sorts.		Sorts.
Yellow and White Tazettas	- 100	Crocus, new varieties	- 100
<i>Iris anglica</i> (<i>xiphioides</i>)	- 75	Ranunculuses, fine sorts	- 250
<i>Iris hispánica</i> (<i>Xiphium</i>)	- 75	Anemones	- 100

The Narcissus Tazettas occupy	- 1200 sq. ft.
The other Narcissi and Jonquils	- 600
The Liliiums, Martagons, Fritillarias, Gladiolus, <i>Iris susiana</i>	- 650
The <i>Iris Xiphium</i> , &c.	- 250
The Crocus	- 600
The Ranunculuses and Anemones	- 1200

In all, the number of square feet planted with bulbs in this establishment is 12,300; and, besides this, one finds here quantities of Amaryllises, Ixias, Antholyzas, Georginas, Auriculas, Primulas, and Pelargoniums.

After glancing at this specification, and considering that there are here still twelve other first rate florists, and as many or more establishments on smaller scales, all of which are exceedingly neat; you may imagine that the small town of Haarlem stands amidst the finest florists' flower-gardens in the world.

With respect to fine Cape and New Holland plants, they are very scarce here, neither do they thrive well. The reasons of this appear to me to be, that the climate is too unfavourable, the soil too wet in winter for exotics, and that too little use is made of the rich turf so common here; but it is also true, that a florist cannot think about botanic plants and his florists' bulbs at the same time, without neglecting one of them.

Although M. van der Hope has a fine and well kept collection of exotics, and seems to be a very great amateur, collecting every year some very scarce plants, with which he endeavours to gain the honorary medal of the exhibitions of Utrecht and Haarlem, he is also, for want of good mould, put to the expense of fetching it in boats from a place thirty miles distant from Haarlem; this is, in my opinion, unnecessary, for I think the turf in the neighbourhood of Haarlem would answer the purpose as well if properly prepared, and it only requires a trial. However, there must be something in this soil which is favourable to hyacinths, and disadvantageous to camellias, ericas, epacrises, and other fine plants; for I was not able, when here last year, to root one cutting of camellia out of fifty, although in Francfort I always counted on rooting nine out of ten.

Fine market-gardens are very common here, as well as large pleasure-grounds, or parks, though the Dutch manner of laying out grounds is very inferior. The whole park is usually planted so thick, that one actually walks in the dark under the trees when the sun shines; and it is only from the mansion that a fine view can be obtained. Stagnant ditches cross each other in all directions; but this taste is too well known, and very justly too little adopted, in other countries, to require further notice.

Horticultural science, about Rotterdam, Amsterdam, and the whole province of Holland, is kept up merely by a few florists in Haarlem, and some botanists in Leyden, and perhaps by a few others; but the love of gardening in private gentlemen has so declined, that the florists could not exist without their trade to foreign countries. It is surprising that as yet none of the numerous cultivators of bulbs has published a work; and even few foreign books on gardening are known among them, because they are of no use for the culture of bulbs.

The botanic garden in Leyden has, as I remember when I was there last year, a good collection of hot-house plants, and others; but it is much inferior to Kew Gardens.

From this I shall depart soon for Hanover, Brunswick, Hamburgh, and Berlin; and hoping that in this last place I shall find a few hours' leisure, I will take the liberty of writing to you again. I am, Sir, &c. — *Jac. Rinz.*

Fruit-trees in Churchyards. — N. Phillipe Bosquet, who died at Amsterdam on the 8th of January last, bequeathed two thousand florins to the Benevolent Society of the Northern Provinces of the Netherlands, on the condition that "two fruit-trees of full growth shall be planted over his grave, the fruit to be publicly sold by auction every year, in order to prove that the receptacles of the dead may be rendered useful and beneficial to the living." The directions of the testator, say the papers, have been complied with. (*Scotsman*, May 20. 1829.)

The most beautiful and picturesque road in Europe, not excepting even the beauties of the Rhine, is the tour from Namur to Liege along the banks of the Meuse. Half-way stands the town of Huy, with its lofty castle and

recently planted vineyards already yielding good wine. This is a singular instance of the establishment of vineyards where no vines were ever before cultivated. (*A Spectator in the Netherlands*, in the *Derbyshire Courier* of Nov. 28. 1829.)

POLAND.

A Manufactory of Sugar from Beet-root is in progress on the estate of Guzow, seven German miles from Warsaw, on the road to Posen. The concern will be conducted upon the newest principles. The government have promised to assist it liberally: they wish the manufacture of sugar to become general in the kingdom, and arrangements are made to instruct pupils free of expense in every branch of the business. Besides the above manufactory, there are already several others actually established. A sample of raw sugar has been sent to Warsaw. The estate alluded to is the property of Count Henry Lubinski. — *J. L. Warsaw, May 13. 1830.*

NORTH AMERICA.

Sweet and sour Apples.— Mr. Bradley mentions an apple which was sweet and boiled soft on one side, and sour and boiled hard on the other (*Treatise on Gardening*); and the late John Jay of New York notices another sweet on one side and sour on the other. (*Comm. Board Agric.* vol. i. p. 362.) I can relate a third case of a similar nature. The late Levi Hollingsworth, merchant, who resided for more than sixty years in Philadelphia, and was a man of the highest integrity, informed me, several years since, that when he was a boy, living at Elkton in Maryland, there was a full grown apple-tree, the fruit of which was sweet on one side, and sour on the other: on the same limb there grew apples quite insipid, others sweet, and others sour. He mentioned the fact as of his own knowledge to a club of literary gentlemen, who met at a public-house once a week to discuss useful subjects, in the year 1762, in Philadelphia; but the doctrine of the marriage of plants was not familiar to them, and the fact was doubted. This so mortified him, that he went down to Elkton, in company with the late Mr. Samuel Nicholas, who was a respectable citizen, and brought away several of the apples to the club. Mr. Hollingsworth assured me that the tree had never been grafted. — *J. M. Philadelphia, Sept. 7. 1829.*

Apples and Pears on the same Tree.— “ Mr. John Gage of Upton Union, a few years ago, grafted a pear upon an apple scion in his garden. When it grew up so as to begin to bear, it bore for two years very excellent pears. The third and fourth years its leaves, which formerly were those of a pear tree, changed, by degrees, to those of an apple tree. The fifth year, and ever since, it has borne excellent apples. This has been related to me by at least fifty of the most respectable men on the spot, who personally knew it to be true.” (*Job Johnston in Long Island Patriot.*) — *J. M. Philadelphia, Sept. 7. 1829.* Unquestionably an error in the observer; the scion in all probability never united properly, and a shoot from the stock was mistaken for it. — *Cond.*

Identity of the Peach and the Nectarine.— In the *Linnean Correspondence* it is stated (preface p. 1.) that a tree bought for a nectarine produced peaches; the next year it bore nectarines and peaches, and for twenty years after. P. Collinson informs Linnæus (p. 7.) that at Lord Wilmington's a tree produced both nectarines and peaches. Sir J. E. Smith, the editor, says, that several instances of this have occurred; and that he was presented with a fruit half nectarine half peach. It grew on a tree which usually bore nectarines and peaches; but in two seasons, at some years' distance from each other, the same tree produced half a dozen of these combined fruits. Collinson mentions (p. 70.) that he saw both fruits on the same tree close to each other; and (p. 75.) that a peach produced a nectarine from a stone, and not a peach, in his own garden. Without knowing

the foregoing facts, Professor Chapman informed me that formerly, in Virginia, peach trees lived a number of years, and that when they were very old, he had often seen them bear nectarines. The fact is well known, he says, to all old natives of Virginia. — *J. M. Philadelphia, Sept. 7. 1829.*

AUSTRALIA.

The Swan River, or more properly Western Australia, 25th of Jan. 1830. — 300,000 acres have been located; and there are in all about 1000 settlers. This is evidently a pasturage country, and will only repay by breeding the finest wool sheep. It has been proved that, at the low price at which grain can be imported from Java, it can never answer to grow that article for exportation except in the interior for home consumption. The soil, both as to quality and the facility of bringing it into cultivation, has been over-rated by Mr. Fraser, who, though an indefatigable botanist, does not understand agriculture. To a certain extent, the soil is a good friable loam; but it soon cakes, and cannot be broken up for cultivation except after rain. There is great variety of soil; and clay, marl, sand, and limestone all lying convenient. All the productions of Europe, including to a certain extent those palms and that species of sugar-cane which are cultivated in Spain, it is believed will thrive here. A parochial lending library for the working classes has been established; a literary institution has been commenced, with 45 subscribers, 12 candidates, and annual funds to the amount of 100*l.*; and it is intended to join to this institution a museum, and a botanical garden. (*Morn. Chron. July 22.*)

A Literary and Scientific Society, patron the Lieutenant-Governor, was on the eve of being formed at Hobart Town, in addition to other highly useful and praiseworthy institutions which have been lately established there. (*Colonial Times, Jan. 29. 1830.*)

Mr. Scott's Garden at Hobart Town. — No resident of Hobart Town, either passing or permanent, should omit visiting Mr. Scott, the industrious and well-informed seedsman of Brisbane Street. In his garden there will be found a most interesting collection of almost all the indigenous plants of our island, and many others of foreign origin. A visit to Mr. Scott will be considered a very useful disposition of a vacant hour. Mr. Scott has now a great collection of Mount Wellington plants, dried and preserved, and has succeeded in collecting a quantity of the bark from the pepper tree; which some of the gentlemen of the faculty so highly approve, that we understand they intend to analyse it, in order to discover its virtue. The pepper shrub of this island grows in a close thicket, to the height of from 6 to 10 ft. when in blossom, in the spring months of November and December. The farina of the flower is so pungent, especially if shaken about by the feet of horses or cattle, that it is necessary to hold a handkerchief to the nose, in order to avoid continually sneezing. It has a pretty appearance with its red bark and dark green leaves. The whole of this country is also interspersed with that magnificent shrub called warrataw, or tulip tree, and its beautiful scarlet flowers. (*Colonial Times, Dec. 11. 1829.*)

Vegetables and Fruit. — Potatoes 4*s.* to 6*s.* per cwt.; cabbages 10*d.* per doz.; onions 1*d.* per lb.; shallots 1*d.* per bunch; turnips 2*d.* do.; carrots 8*d.* do.; grapes 6*d.* per lb.; peaches 4*s.* per basket; nectarines 6*s.* do.; apples 2*s.* per doz.; melons 4*d.* each. The long continuance of dry weather has made forage unusually scarce. Hay is sold at from 9*l.* to 10*l.* per ton. High fruit has also been made to ripen too fast, and great quantities have fallen prematurely from the trees. Peaches and nectarines will hardly ripen at all. (*Hobart Town Courier, March 6. 1830.*)

ART. III. *Domestic Notices.*

ENGLAND.

STOCKPORT Floral and Horticultural Society.—A Floral and Horticultural Society has been established at Stockport, and a notice of the circumstance in the *Stockport Advertiser* is accompanied by the following gratifying observations :— “ Of all recreations, the cultivation of fruits and flowers is the one which ought to be the most encouraged. It is most congenial to civilisation, and conduces very materially to health ; attaches men to their homes, consequently in many instances prevents a life of dissipation ; inclines the mind to serious thought and reflection ; and teaches us to look through nature up to nature’s God.

“ Every rank of people, from the humble cottager with his favourite auriculas and polyanthus, to the lady of fashion with her more tender exotics, equally enjoys flowers as a gratification, and nothing more conspicuously bespeaks the good taste of the possessor than a well cultivated garden ; and it may be generally remarked, that when we see a neat cottage-border well stocked with plants, the inhabitant is respectable and possesses domestic comfort ; whilst, on the contrary, a neglected garden but too frequently marks the indolence and bespeaks the unhappy state of the owner. But what must be the satisfaction, as well as essential profit, which the botanist derives from a closer examination of these beauties of nature ! They behold them as the wonderful works of the Creator, and are convinced that vegetation could not possibly be a mere matter of chance, but must be effected by the all-creating wisdom of a beneficent Being. The poets are never more fortunate in their illustrations than when they sing the beauties and virtues of these splendid productions ; nor does the artist derive less satisfaction in delineating their delicate and lovely forms with the pencil. Indeed, of all luxurious indulgences, that of the cultivation of flowers is the most innocent, and (except our terrestrial angels, ever bright and fair) they are of all embellishments the most beautiful ; therefore, we cannot for a moment doubt that the Stockport Floral and Horticultural Society will meet with such fostering aid, as to place it foremost in the rank of its competitors.” (*Stockport Advertiser*, March 5.)

Medico-Botanical Society.— This Society suddenly claimed the attention of the public ; its pretensions were great, its assurance unbounded. It speedily became distinguished, not by its publications or discoveries, but by the number of princes it enrolled in its list. It is needless now to expose the extent of its short-lived quackery ; but the evil deeds of that institution will long remain in the impression they have contributed to confirm throughout Europe of the character of our scientific establishments. It would be at once a judicious and a dignified course, if those lovers of science who have been so grievously deceived in this Society were to enrol upon the latest page of its history its highest claim to public approbation, and by signing its dissolution, offer the only atonement in their power to the insulted science of their country. As, with a singular inversion of principle, the Society contrived to render *expulsion* the highest *honour* it could confer ; so it remains to exemplify, in *suicide*, the sublimest *virtue* of which it is capable. (*Professor Babbage* in the *Edinb. Jour. of Science* for July, 1830, p. 76.)

Cottage Gardens.— The sensible remarks of R. C. Kirkliston (p. 109.), respecting labourer’s cottages, meet with my warmest approbation ; they are true and important. I have long noticed that the labourers or mechanics who are attached to their gardens are generally sober and industrious. Every man must have his hobby, and a garden is the best hobby a poor man can have. Thirty years ago, when a Lancashire weaver could live by his honest labour, the neighbourhood of Eccles and Barton, and indeed the entire vicinity of Manchester, were celebrated for neat gardens and clean houses in the occupation of the above class of mechanics. It was, indeed, a

most delightful treat to visit the tulip beds, the gooseberry gardens, or the auricula and polyanthus sheds of some of these intelligent and ingenious men. Of late years many have turned their attention to the culture of apple trees; and, wretched as the situation of the whole of this class of useful men now is, there is still a marked difference in the circumstances and appearance of those who love their gardens. But some there are who do love them, without being able to possess them; many houses being now built in this, as well as other districts, without a garden. This is wretched policy. I find among the few cottage tenants I have here, those with a garden pay the best and the most rent, and seem to live in the greatest comfort. I am glad to find you are going to publish a *Manual of Cottage-Gardening*, with the model of a cottage, at the moderate price of 1s. 6d. I shall direct my booksellers, Messrs. Longman and Co., to send me a few copies when published, and I have no doubt of its being perfectly adapted to insure the end designed, improvement in cottage building. On some future occasion I will, if not intruding too much on your pages, present you with the description of several cottages in the village of Hadnall, near Shrewsbury, with remarks on the advantage of a plot of land being attached to the dwellings of the labouring classes. I am, Sir, &c. — *Charles Hulbert. High Street, Shrewsbury, Feb. 24.*

Wistaria Consequana. — Sir, In my botanical rounds and researches, I find that beautiful climber the *Glycine sinensis* [*Wistaria Consequana*] in many green-houses, and in some hot or forcing houses. Now, Sir, as this plant is worthy of every gentleman's garden, for the information of those friends of yours who may, or who may wish to, possess it, I here give them my experience in the treatment of it. Loam and peat I find suit it better than any thing else. The one I have has been with me three or four years; it flowers twice in the year; I have it in a very large pot, and it is from 10 to 15 ft. high. I have kept it out in the most severe frost, nearly unprotected; and that intense frost which we had this spring, after some very warm days, it was out under a south wall, and not at all injured. I have increased it, by layers, with little or no difficulty. It is a plant of such beauty as a climber for a veranda, or any warm situation out of doors, that I would recommend it to every lover of plants, especially of climbers, among which it holds the highest station. I am, Sir, &c. — *G. G. Edgbaston, near Birmingham, Aug., 1830.*

The Rhodes Grape. — Sir, I send you a specimen of the Rhodes Grape, a seedling, raised at Horsforth Hall, near Leeds, a few years ago. It is, as you will see, a fine large black grape, but rather a shy bearer. It is also a bad setter; the specimen sent was set with Black Hamburg. I do not consider the bunch sent as the best specimen that could be produced, owing to the wet season and a wet border. In more favourable circumstances, I have no hesitation in saying, that for size of bunch and berry (fig. 116.) it bids fair to be amongst the finest of black grapes. The flavour is not particularly remarkable. I remain, Sir, &c. — *Thos. Appleby, Gardener at Horsforth. Horsforth Hall, Aug. 4.*

The bunch contained 84 berries, and weighed 1 lb. 7 oz.; and the flavour was very nearly as good as that of the Black Hamburg. — *Cont.*

Large Pumpkins. — Sir, Seeing in your Magazine of December last, No. 23., an account of a pumpkin grown by Mr. Thomson, which weighed, when ripe, half a hundred, I beg to inform you that I grew one in the garden at Broomhall, near Orwestry, the seat of H. P. T. Aubrey, Esq., in 1819, weighing 92 lbs.; in 1820, one weighing 113 lbs.; and in 1821, one weighing 136 lbs. I am, Sir, &c. — *Geo. Davenport, Gardener. June, 1830.*



Large Melon.— A Cantaloup melon has been raised by Edward King, gardener to John Buckle, Esq., of the Wildlands, near Chepstow, measuring $34\frac{1}{2}$ in. in circumference, and weighing 15 lb. 2 oz. (*Newsp.*)

Large Cucumber.— A cucumber (the Bloor's White Spine) was cut on the 8th of June, in the garden of W. Hardman, Esq., of Chamber Hall, near Bury, of the following dimensions:— Length 26 in., girth 11 in., weight 5 lbs. $8\frac{3}{4}$ oz. It did not appear overgrown, but in a proper state for the table. (*Morn. Chron.*, June 23.)

SCOTLAND.

Promenade, &c., in the Caledonian Horticultural Society's Experimental Garden at Inverleith, July 10.— The garden is about ten English acres in extent, and commands from every part a superb view of the city. It is divided into compartments suited to the different kinds of plants raised in it; the chief of these compartments being the arboretum, the orchard, the nursery, the hot-houses and stoves, and the kitchen-garden. The arboretum is formed of the numerous species and varieties of trees and shrubs, and extends round nearly three sides of the garden, besides intersecting it in the form of two raised belts. The orchard contains upwards of 600 sorts of apples, collected with great care, and at considerable expense, and many new seedling varieties. The pears amount to 350 sorts, the plums to 100 sorts, the cherries to 80 sorts, and the filberts to about 10 sorts. Of gooseberries there are 350 varieties; and the distinct kinds of strawberries are about 100. The nursery is filled with fruit and forest trees and shrubs in various stages of growth, intended chiefly for distribution among members. The hot-house establishment is not yet complete, but the collection of pine-apples amounts to about 20 sorts, and that of grape vines to about 100 sorts. The culinarium, or kitchen-garden department, is richly stocked with rare culinary plants and herbs. The whole garden is under the management of Mr. Barnet, and never did we see a place of the kind in better order. Not a weed was to be seen; and, still more marvellous to be told, not a bush appeared deranged, nor a bed furrowed by the deluges which had poured down daily for a month before from the weeping skies. The turf-walks were shaven so closely, that they seemed to the eye, and felt to the feet, like a carpet of velvet.

In the centre of the garden a large tent was erected, supported on pillars gaily festooned with evergreens and flowers. Under this awning two tables were placed, capable of accommodating about 500 people. The tables were profusely covered with all the fruits of the season, interspersed with confections, and beside each cover a nosegay was invitingly deposited. At each end of the tent was an elevated platform, supporting a variety of magnificent exotic plants, the exhibition of which was one of the principal features of the entertainment. The collection was as numerous as many of the specimens were splendid. It included the *Nepénthes distillatòria*, or pitcher plant of China, from the garden of Professor Dunbar, bearing pitchers 10 in. long; the *Opúntia Tùna*, or prickly pear, in fruit, from the conservatory of Mr. P. Neill; a splendid specimen of the *Cactus speciosíssima*, in flower; from the botanic garden, the *Alstrœmèria pulchélla*, tricolor, and *Pelegrina*; a large *Cycas revolùta*, and *Latània borbónica*; *Hibiscus Ròsa sinénsis*, *Kálmia latifòlia* (splendid), *Erythrìna laurifòlia* (property of garden), *Gladiolus cardinàlis*, *Pròtea nìgra*, *Lílium japónicum*, *Maurándya Barclayàna*, *Sarracènia rùbra*, *Calceolària purpùrea*; *Verbèna Meléndres*, *Pimelèa ròsea*; and a vast variety of ericas, or heath plants, among which the most remarkable, both for size and beauty, were specimens of the *perspícu*a, *ventricòsa*, *erécta*, *flórida*, *álba*, *pilòsa*, *tríc*olor, *præ'gnans*, *metulæflòra*, *radiàta*, *spùria*, *élegans*, and *jasminiflòra*. The manner in which these superb plants were arranged showed them off to the greatest advantage.

The chief contributors of the exotics were Mr. M'Nab of the botanic garden, Professor Dunbar, Mr. Cunningham of Comely Bank, Mr. Patrick Neill, Messrs. Dickson and Sons, Hanover Street, and Mr. Wauchope of Edmonstone. Messrs. Peacock of Leith Walk nursery furnished nosegays for the company, in each of which there was either a moss, a crimson, or a blush rose. These gentlemen also exhibited fifty-nine different varieties of pinks, amongst which were several seedlings of great beauty, raised by themselves. (*Edinburgh Observer*, July 13.)

Edinburgh Vegetable Market. — Aug. 7. There was a very large display of garden produce in the market this morning; and there was a grand turn out of the citizens. Grapes, peaches, nectarines, and currants sold rapidly. Red and white currants sold at 6*d.* and 7*d.*, and black currants 1*s.* and 1*s.* 2*d.* a basket. There was a great supply of potatoes; and two sorts, that have been rapidly rising in the estimation of horticulturists during the last five years, namely, the Liverpool Don, and the Bath Kidney, sold at 6*d.* to 8*d.* a peck. Excellent Black Hamburgh Grapes were sold at 1*s.* 9*d.* a lb. Gooseberries from 3*s.* to 5*s.* a gallon. On the whole, both the sale and prices exceeded the expectations of the gardeners. (*Scotsman*, Aug. 7.)

C — *Cottage, near Glasgow*, Oct. 6. 1829. — Sir, We are, thanks to good food, abundant exercise, and keen appetites, in good health and spirits, and we continue to like our little retreat here as well as when we first came to it two years ago; for, although the effect of novelty is gone, we have always some thing in progress to keep up an interest. Indeed my flower-garden is an unceasing source of enjoyment, as well as employment to me. I remember, before I left London, wishing I could manage to spend my days in my garden. You hinted, rationally enough, a doubt whether in that event the interest which I then felt and anticipated would not leave me. Now I can say, after a trial of three years, it has not; and I have no fears that it ever will. The beauty of gardening is, that, independently of present gratification, there is always something to do, something to project, and something to look forward to, to keep up a sufficient degree of excitement, without too much anxiety. I wish you were here to see what a pretty place I have, and how busy I am; never, when the weather enables me to be out of doors, without a rake or a trowel in my hand, and happier, I guess, than George the Fourth in his gorgeous palace at Windsor. I fear, however, with all my zeal for this art, I have not much talent for making discoveries or observations.

I noticed, last winter, that one of my double primroses, flowering out of season, produced single flowers. They were what florists call pin-eyed, the pistil being visible at the mouth of the tube; and, on tearing the tube open, the anthers were found perfectly formed and ranged round the bottom. Early in the spring some of the flowers on the same plant were semi-double; and on examining the interior of their tubes, such of the anthers as had not been transformed into perfect petals were found at the bottom in the form of small tiny leaflets. Farther in the season, when vegetation was more vigorous, the flowers were perfectly double, and no anthers in any form were to be found in the tube; a proof, I conceive (if any were necessary), of the correctness of the generally received opinion, that in double flowers the anthers have been converted into petals. Among my coloured single primroses I have some whose first flowers in the season are regular primroses; but those produced later, say about the beginning of summer, are furnished with a scale like polyanthus.

Mrs. W. had a present made her of a beautiful pet goldfinch, which, after moulting, two years ago, became altogether of a dingy black colour, not a red, or a yellow, or a white feather to be seen; and so it continued for a twelvemonth. Reflecting on the cause of this metamorphosis, I could think of no peculiarity in the habits of the bird, except that it lived almost entirely on hemp seed; and, to try if this had any effect in changing his

colour, he was, before and about the time of moulting last year, made to eat a portion of canary seed (which he would not taste if he could help it); and in process of time he was furnished with a beautiful new suit of the original colours. It is now moulting again, and kept upon a mixed diet. I would have fed him on hemp-seed again, by way of experiment, but was afraid of injuring his health. Do you think that the sort of food he eats can affect the colour of his feathers? And, if so, would not you think that the same cause might produce a somewhat similar effect upon the colour of the human species? By the by, goldfinches, which used to be plentiful enough hereabout, are scarcely to be seen, whilst I understand there are still plenty of them farther north.

I was lately at Castle Semple gardens, the property of Colonel Harvey, which have been formed at great expense, under the superintendence of Mr. Hay of Edinburgh. There I saw pine-apple plants growing in a bed of earth, placed over a chamber filled loosely with stones, and heated by steam, the stones being introduced for the purpose of retaining heat. The plants were in a very healthy state, and growing vigorously; but the gardener, Mr. Lauder (whose brother you may recollect being some time ago with Mr. Campbell, at the Comte de Vande's), was apprehensive they would not show fruit at the right time. Experience, I believe, proves that such a result may be anticipated. I am, dear Sir, &c. — A. W.

The Ash and Beech doubtful Natives. — These trees have a place in the *Flora Scòtica* of Lightfoot and Hooker, and they have long ornamented our "woods and plantations." But there is great reason to doubt their being truly indigenous to this country, or having formed any part of the ancient forests. No traces of them occur in our peat mosses: yet ash keys and beech mast would in all probability have proved as indestructible as hazel nuts or fir cones, which are abundant in many peat mosses. Besides the oak, which seems greatly to have prevailed, the ancient forests probably consisted chiefly of fir, meaning the *Pinus sylvestris*, or Scotch pine; birk or birch; hazel; wych elm, or broad-leaved, not the smooth wych elm of England; roan tree, or mountain-ash; yew; aller or alder; and saugh, as the willow is here called." (Note by the Editor in *Jameson's Journal* for Oct. 1829. and Jan. 1830.)

Setting the Tokay Grape. — I have for the last seven years practised the following method of setting the Tokay grape with the most perfect success; — Before the vines come into flower, I keep them in a temperature of from 70° to 75°; and as I see the first opening of the flower, I gradually lower the temperature to 60° or 65°, and find that they set freely, and as well as the Hamburgh, and other free-setting kinds. Any persons wishing to satisfy themselves as to the above statement may, if convenient, call and see my Tokay vines, when I shall be ready to answer any enquiries they may make respecting them. — Duncan Wright, Gardener to James Kibble, Esq., of Greenlaw, near Paisley. July 12.

IRELAND.

Horticultural Society of Ireland. — June 22. Among the plants which attracted particular notice were, *Combrètum purpureum*, *Cactus speciosissimus*, *Ixora coccinea*, *Calceolària corymbosa*, *C. rugosa* var. *angustifolia*, *C. arachnoides*, *Alstrœmèria tricolor*, *Lantana mutabilis*, and fine specimens of *Erica ventricosa* var. *stellata* and *odorata*, sent by Mr. Mackay, from the college botanic gardens; *Erythrina Crista galli*, *Pœonia Whittlèji*, *Gaulthèria Shal-lon*, and fine flowering specimens of *Calceolària rugosa*, *connata*, and *integrifolia*, sent by Mr. Nevin, from the chief secretary's garden; *Thunbèrgia alata*, sent by Viscount Dungarvan; *Erythrina Crista galli*, *A'rum Colocàsia*, *Amaryllis purpurea*, sent by Isaac D'Olier, Esq.; *Carmichaelia australis*, *Lechenaúltia formosa*, *Pimeleà decussata*, *Euchilus obcordatus*, sent by Mr. Grant, gardener to G. Putland, Esq.; *Melaleuca splendens* and *fùlgens*,

Ardisia colorata and *solanacea*, *Verbena pulchella* and *Lamberti*, sent by Mr. Keefe, nurseryman; *Andr meda buxifolia*, *Stenochilus maculatus*, and a very splendid collection of heaths, sent by Messrs. Toole, nursery and seedsmen.

The prizes were awarded as follows : —

Flowers. Ranunculuses, consisting of 12 varieties, three blossoms of each variety: 1. Mr. M'Mahon, gardener to William Rathbourne, Esq., Scripplestown; 2. Mr. Ryan, gardener to T. Leland, Esq., Roebuck; 3. Dr. Plant, Montpelier Place, Black Rock. Pinks, consisting of twelve varieties, three blossoms of each variety: 1. Mr. Ryan; 2. Arthur Crofton, Esq., Roebuck Castle. Seedling Pink: 1. Mr. Farrell, 116. Capel Street; 2. Mr. Ryan. Bouquet of Roses, consisting of not less than twelve varieties: 1. Mr. Nevin, gardener to the chief secretary, Phoenix Park; 2. Thomas Lyster, Esq., Lyster Wood, Miltown. Group of eight Pelargoniums, of distinct sorts: 1. Mr. Toole, Westmoreland Street; 2. Mr. Simpson, College Green. Seedling Pelargonium: 1. Mr. Simpson; 2. Mr. Toole. Group of six Exotics, of different sorts: 1. Mr. Nevin; 2. Mr. Grant, gardener to George Putland, Esq., Bray-head House, Bray. Bouquet of cut Flowers: 1. Mr. Nevin; 2. Henry Haffield, Esq., Cullen's Wood. — *Fruit.* Plate of twenty-four Strawberries: 1. Mr. Fox, gardener to Charles Smith, Esq., Rosemount, Booterstown; 2. Charles Slowe, Esq., Chapelizod.

This was the first exhibition since the Society was remodelled, and it was most gratifying to the members to see that the arrangements were approved of by the principal practical gardeners who constituted the former committee; and who most obligingly lent their assistance on the present occasion. The stage presented one of the most brilliant displays of plants and cut flowers ever exhibited in Dublin; and it is hoped that this Meeting will be the precursor of an increasing interest in the advancement of horticultural science in Ireland. (*Dublin Evening Post*, June 26.)

Aug. 10. The following prizes were adjudged : —

Plants. Exotic, Mr. Nevin, gardener to the chief secretary. Six rarest and best grown: 1. Mr. Keefe, nurseryman, the gold medal; 2. Mr. Grant, gardener to G. Putland, Esq. Herbaceous. Best six rare, each different, Mr. Toole, seedsman. — *Flowers.* Carnations. Best Flake of any colour (the silver medal), and best Bizard, H. Plant, M.D. Best three Pink Bizards: 1. H. Plant, M.D.; 2. Mr. M'Mahon, gardener to W. Rathborne, Esq. Scarlet (three): 1. H. Haffield, Esq., Cullen's Wood; 2. H. Plant, M.D. Scarlet Flake (three): 1. H. Plant, M.D.; 2. Mr. Clarke, gardener to Mrs. La Touche, Belvue. Purple Flake (three): 1. and 2. H. Plant, M.D. Pink Flake (three): 1. H. Plant, M.D.; 2. Mr. M'Cabe, gardener to the Right Hon. W. Saurin. Seedling Pink Bizard, Mr. Derm, gardener to the Right Hon. Earl of Charleville. Scarlet Bizard, Scarlet Flake, and Purple Flake, Henry Haffield, Esq., Cullen's Wood. Pink Flake, Mrs. Synge, Glenmore Castle. Picotees. The best six Red, H. Haffield, Esq. Six Purple, H. Plant, M.D. Seedling, H. Haffield, Esq. Yellow Picotees, the best Self, disqualified. Mixed, Mr. Hessian, gardener to R. Roe, Esq. Seedling, Mr. Derm. Georginas (the best stand of not less than eighteen flowers, arranged in sorts and named): 1. J. T. Mackay, Esq. M.R.I.A. A.L.S.; 2. Mr. Nevin. Seedling (first time of blooming): 1. Mr. Nevin; 2. disqualified. — *Fruit.* Pines. No prize was adjudged, as there were none sent in of a sufficient weight. Three very fine specimens of pines, grown without fire or tan heat, were sent to the exhibition by Richard Rothwell, Esq., of Kells. Two of these were cut up, and the flavour was found to be particularly fine, but unfortunately they being under weight, three pounds being the standard, the Committee could not award a prize. Grapes. The weightiest bunch of any variety, except the Syrian: 1. (5½ lbs.) Mr. Byrne, gardener to J. Alexander, Esq. Carlow; 2. (2½ lbs.) Mr. M'Cabe. Muscat, or Frontignac, the best-flavoured: 1. Mr. M'Manus, gardener to Samuel Hutchinson, Esq.; 2.

Mr. M'Mahon. Black, not Muscat or Frontignac, the best-flavoured: 1. Mr. Winton, gardener to T. R. Needham, Esq.; 2. Mr. Archbold, gardener to Michael Sweetman, Esq. White, not Muscat or Frontignac, the best-flavoured: 1. Mr. Downes, gardener to Thomas Crosthwait, Esq.; 2. Mr. Derm. Peaches. Six Double Montaigne: 1. Mr. Wilkie, gardener to W. Gregory, Esq.; 2. Hon. and Rev. W. Plunkett. Six finest-flavoured Noblesse: 1. Mr. Hyland, gardener to Thomas Ellis, Esq.; 2. Mr. Hendrick, gardener to W. Gibbons, Esq. Six finest-flavoured, not Montaigne or Noblesse: 1. Mr. Hetherington, gardener to the Right Hon. the Earl of Charlemont. Nectarines, six finest-flavoured of any variety: 1. and 2. disqualified. Apricots, six finest-flavoured: 1. A. B. Crofton, Esq., Roebuck Castle; 2. Mr. Grant. Melons. Largest of any variety, 7 lbs. 2 oz., Mr. Nevin. Finest-flavoured Scarlet Rock: 1. Mr. Fox, gardener to John Sweetman, Esq.; 2. premium withheld. Finest-flavoured, any other variety: 1. Mr. Henly; 2. Mr. Nevin. Plums (six), Green Gage: 1 and 2. disqualified. Gooseberries (the heaviest twenty-four): 1. Mr. Dumphy, gardener to A. Cooper, Esq.; 2. Mr. Hessian. Twenty-four finest-flavoured, Mr. M'Mahon. Currants (the weightiest twenty-four bunches of white): 1. Mr. Hetherington; 2. Mr. Fox. Figs (six finest-flavoured of any variety): 1. and 2. disqualified.

Amongst the plants exhibited, the following were reckoned the finest specimens:—

Sent from the college botanic gardens by T. Mackay, Esq., M.R.I.A. and A.L.S., as ornamental exotics:—*Gesneria bulbosa*, *Gloxinia hirsuta*, *Besleria pulchella*, *Bignonia grandifolia*, *Sinningia villosa*, and *velutina*, *Boronia denticulata*, *Pimelæa glauca*; also some fine specimens of *Erica Eweriana*, *gemmaeflora*, *jasminiflora*, and *tricolor*, and several beautiful exotics not now so rare.

Sent by Mr. Keeffe, nurseryman:—*Fuchsia microphylla* and *virgata*, *Hakea linearis*, *Selago fascicularis*, *Gloxinia caulescens* and *alba*, *Boronia denticulata*, and some beautiful specimens of heaths and pelargoniums.

Sent by Mr. Nevin, chief secretary's gardener:—*Erythrina Crista galli*, first prize, as best-blown exotic, and grown from a cutting of this year; *Pharnaceum incanum*, *Fuchsia virgata*, *Salvia pseudo-coccinea*, *Tristania nereifolia*, *Erica longipedunculata*, *Lobelia corymbosa*, *Cactus speciosa*, with flowers and ripe fruit, *Dracæna australis*, *Calceolaria rugosa*, *Bignonia radicans*.

Sent by Mr. Toole:—*Calceolaria arachnoides*, *plantaginifolia*, *thyrsifolia*, and *integrifolia*; *Isotoma axillaris*, *Andrœmeda buxifolia*, *Fuchsia cónica* and *virgata*, and a fine collection of *Ericas*. *Phlox philadelphica*, *penduliflora*, *corymbosa*, *americana nova*, *Wheeleri*, and *capitata*. (*Saunders's News-Letter*, Aug. 14.)

Large Strawberry.—A Wilmot's Superb strawberry was gathered at Belvoir Park, near Belfast, in the first week of July, which measured 6 in. in circumference, and weighed a full ounce.—*J. F.* Aug. 1830.

ART. IV. Retrospective Criticism.

MANAGEMENT of the Horticultural Society.—Sir, The facility with which you receive contradictions to your opinions, and the readiness with which you give them to the judgment of the public, encourage me to attack some of the doctrines you have disseminated in your *Gardener's Magazine* for April, 1830. And first, as to that which you call "Mr. Loudon's evidence," on the general management of the Horticultural Society, and the plan of the garden. You say (p. 248.), "Not a plant, cutting, or seed ought to be given away direct from the garden, or in consequence of written ap-

plications to the Society, but to nurserymen or other commercial gardeners. All spare plants, cuttings, or seeds, ought to be given away at the meetings of the Society to those who happen to attend; and the officers of the Society ought on no account to be liable to be written to by country or other members (always excepting commercial gardeners), for grafts, seeds, plants, &c. There can be no end to these applications, which add much to the expense of conducting the business of the Society, and cannot be otherwise than sources of dissatisfaction to all parties." Now, (not to dwell on the circumstance that all this, which is dignified with the name of evidence, is pure and mere opinion, not on a matter of science, but of the probable effects of a particular mode of conducting a joint stock company or partnership,) I wish to observe, that although a society possibly may be properly conducted in the manner you recommend, yet it must be a very different society from the present London Horticultural. Cast your eye over the list of its members, and see how very many there are who wholly reside in the country, and never visit London at all. What inducement have they to become fellows of the Society? They can neither avail themselves of the library, nor of the models of fruits, nor acquire information at the meetings of the Society, nor hope to acquire importance as members of the committees. The only compensation they can expect for their money, is the return of plants, seeds, and cuttings, which may be issued to them from the garden. I say the *only* return; for the sparing supply of a few numbers of wire-wove hot-pressed *Transactions*, which are scattered over a long period of time, and in which the information that is of real importance comes still more rarely than the publications, cannot be thought, by any reasonable person, a return worth computing for the annual payment of four guineas. I ought, however, to have enumerated, among the valuable equivalents, the permission given to the fellows to send up their best vegetable productions, whether pines, grapes, peaches, apples, or any other, to be exhibited at the meetings of the Society, and there devoured with far more refined taste and genuine science than could be evinced by a country grower in the munching of a pippin or pine-apple. But, beyond these, I am not aware of any inducement for a resident in the country to become a fellow, except as he wishes to become a member of a joint stock nursery ground, from which he hopes to derive plants, fruits, seeds, and vegetables, either newly introduced or improved by culture, or which may be depended on as genuine, and which he, whether wisely or not, expects that he shall be able to obtain cheaper or better, or more varied, or more new, than he can get from his own nursery gardener. He believes that a number of persons subscribing may be able, by sending out a Don or a Douglas, to obtain new ornaments to his park or his garden, which he individually could not hope to acquire; because the cost of fitting out such an adventurer at his own risk is greater than, with very few exceptions, can be defrayed by a private person. Judge, then, what is his surprise to learn from your pen that he is to be interdicted from receiving a plant, seed, or cutting, direct from the garden, because he is not a commercial gardener. Will a country gentleman in Dorsetshire or Gloucestershire be content to pay his money, year after year, for the introduction of valuable novelties, that they may all be engrossed by the commercial gardeners, who know extremely well how to appreciate the public appetite for any thing that is new, or really good, and make their customers pay very handsomely for such articles? I have not heard of any nurseryman yet who inserts in his circulars, "Fifty per cent discount is allowed to all members of the London Horticultural Society." I am so far from acceding to your doctrine, that I am of opinion that too great a preference and priority is already given by the London Horticultural Society to commercial gardeners, in supplying them exclusively with all new and superior articles, with the intent that they shall make an abundant profit

thereof from the rest of the world before any are issued to fellows who are not engaged in that line of commerce.

I am not insensible to the talent, the science, the enterprize, and the liberality of commercial gardeners. If they wish to form a joint stock company, for the purpose of discovering and importing new and valuable foreign productions exclusively for the use of the trade, it is competent for them to do so, and then let them charge and exclude as they please; but if Mr. Loddiges, or Mr. Kennedy, puts down each his four guineas against my four guineas, or his ten pounds against my ten pounds, for the garden, I contend that we are partners and equals in this speculation: and I am jealous, and, I believe, justly so, that these gentlemen shall get their *A'rbutus prócera*, or *Caméllia reticulàta*, or *Pìnus Douglàsi*, when I am denied it. But it will be said, they contribute articles to the garden, and take these by way of exchange. I, however, should much prefer that what they contribute in plants should rather be paid for in money, or in plants which there is little difficulty in obtaining, than in articles of peculiar rarity or excellence: the latter ought to be distributed among all of the fellows who wish to obtain them as equally and impartially as possible. All do not wish for the same articles. A florist has no room for a pine 240 ft. high; a landscape-gardener cares not for a new grey-edged auricula; an orchardist may not covet an amaryllis. But all, if they know that the circumstance of their not being in trade excludes them from the fair share of the returns of the joint adventure, would naturally and reasonably hasten to dissolve the partnership. For my own part, I must say, that, if your advice is adopted, I shall withdraw my name from the list of fellows; and I also avow my hope, that one effect of the recent change in our councils will be, not a more niggardly, but a more abundant issue to country fellows, who cannot attend the Society's meetings, of all articles they may desire, which it is in the power of the Society to bestow. I believe that if the concerns of the Society be conducted with impartiality and judgment, commercial gardeners, very many of whom I know, and most highly esteem and admire, may combine with private persons not engaged in trade to sustain, as they did to form, this Society, with justice and satisfaction to each class; but the gentlemen are not so dependent on the nurserymen, but that if too great a preference is given to the latter in the distribution of new plants, the gentlemen may fearlessly withdraw and form another society, exclusively consisting of persons not engaged in trade, and send out their exploring botanists, and enrich their collection with objects which shall be impartially distributed among the members, so that they need not pay twice over for the same thing, or suffer the unpleasant alternative of waiting till the article is divulged over the whole kingdom, and become dog-cheap, before they can enrich their own garden with the very thing which their combined enterprise introduced. And, if the fellows of the Society are to be at all remunerated with a share of the produce, how are those who live in the country to obtain it, except through the medium of writing to the Society's officers for it? If all the country residents were to withdraw from the Society, the catalogue of fellows would be extremely diminished, and their means of effecting the useful objects of their union much curtailed. I am, Sir, &c. — *Causidicus*, June, 1830.

The Cottage System, &c. — I am afraid our opinions may clash respecting cottagers. What I wished to correct was what had appeared in the *Quarterly*, and you had copied into the *Gardener's Magazine*, respecting the late and present Duke of Northumberland. The late duke, certainly at the sacrifice of several thousands a year in rental, carried the cottage system completely into effect. The cottages that were built had two apartments, a thing unusual in the county before; and had each half an acre of land attached, as garden and potato-ground: those who possessed, or wished to have, a cow, had from 5 to 9 acres of old grass land let for that

purpose. Now, the rents were not much above half of what might have been got for them from a farmer; yet it did not make labourers so happy and comfortable as might have been expected. It too often led to jealousies and quarrels with the adjoining farmer, to whom part of them were intended to officiate as farm-labourers: when this was the case, and the cotter could not get employment at home, the difference of the rent was then of so little consequence, that I have known some give up the cottage to become a bailiff. Besides, it has not kept them off the parish: almost every township which they inhabit can point out individuals who have had parochial relief. Except in very fertile districts, and where they are within reach of a town, to get rid of the garden stuff, half an acre appears more than a labourer can manage with a spade. They generally employ a person with a plough to assist them in sowing the corn (of which they have always a part), and planting the potatoes. To show how inadequate they have been found, I may say that the present duke (than whom there cannot exist a more beneficent, kind-hearted nobleman,) has ordered several of them to be again attached to the farms, as they have become vacant, and are contiguous. I throw out these hints and facts, as I am afraid you may be led away, by warmth of feeling in favour of the labourers, to recommend measures which may turn out much to their disadvantage, like the present poor laws, which have done infinite mischief to those they were intended to benefit. The first question, therefore, must always be, Is there likely to be sufficient employment near the intended site, or a town at such a distance as may take off crops raised by the spade? Lands, then, might be let to advantage to the cottager; but the farmer can raise crops with the plough at much less expense, and therefore with more advantage to the community. I have often fancied that in-door mechanics make much better gardeners than the farm-labourer: where they have adjoining cottages in the same village, the gardens of the former are much better cultivated. It is probable that the change to exercise in the open air, which is so necessary to health, may make it much more pleasant to them than to the farm-labourer, who has probably been employed at the most laborious work during the day. It is generally thought that a hind can keep himself or son much more economically than will be admitted in the farm-house. By killing a pig in the autumn (of which they sell the hams), purchasing part of an ox or a sheep from their master in the autumn or winter, they always contrive to have wholesome food, or, as they call it, "kitchen," to their potatoes all the year: they get milk from the cow during summer; but she is considered a very bad housewife that uses it new: she ought to sell 1 or 1½ cwt. of butter. I have heard of some making 4 firkins from one cow. They scarcely ever make veal of the calf, as this is a breeding country, and the calves are worth more to the farmer for rearing. Some of the villagers, where there is waste land, make something yearly by keeping a brood goose: the goslings some immediately sell at 1s. or 1s. 3d.; or keep them till stubbling-time, and sell them to the corn farmers, who do not choose to rear them, when they are worth about double that price. The shepherds and hinds are very anxious to give their children a suitable education: when not within reach of a school, a hind will hire a young lad into the house for that purpose; and when a neighbour is within reachable distance, his children may also attend. Most village schoolmasters find it their interest to teach a night-school during the winter; that is, two hours in the evening for lads who have been employed during the day. By these, and the other more common means of charity-schools on the Lancasterian and Bell systems, very few there are who cannot read and write. In the *Journal of a Naturalist* will be found some accounts of the culture of the teasel by the cottager, as also of potatoes. A custom has gained ground here, within the last few years, of the farmer setting potatoes for small tradesmen, mechanics, &c., who find the seed, and, in some instances, the manure, at the rate of 10l. or 12l. per acre: they only keep the

weeds down by hoeing, and receive the produce in the autumn. There is also a hint thrown out in the same book respecting dyers' weed (*Reseda Lutèola*): it appears to flourish most luxuriantly on wastes, rubbish of quarries, and might be collected; perhaps, also, the *Digitàlis*, if it is still in as much favour with the physician. I once saw a cottager growing henbane and white poppies for the druggist. I did not learn how they paid him; but there are, in many places, wild plants which run to waste. I remember once being solicited to employ a person to gather the *Daucus Caròta* from some sandy dikes near the shore: a physician had prescribed the use of the ripe seeds, as tea, as a remedy or preventive of the gravel. It was so very plentiful that tons might have been got, if there had been a demand to pay the gatherer.

The cottages in this county are certainly far from good: most of them have only one apartment, sometimes with an earthen floor, where they cook, eat, and sleep in close beds (beds cased with wood). Those who have two ends do not appear to use the second much, the expense of fuel coming too high for them to do so. I do think the first improvement will be to have the sleeping apartments above, which the fire will then always keep dry and comfortable. The tile is a bad cover: it is very porous, and frequently breaks or scales off with frost. The Welsh slate is now superseding it here; the additional expense is very trifling; it may be laid on at less elevation, and saves roofing timber. Probably railroads and canals may soon convey these slates to every part of the united kingdom, at so low a rate as may enable us to get rid of the unsightly red pantile. On the subject of fuel, there still appears an immense accumulation of small coal at the sea-side collieries. Will the conveyance ever become so low as to allow them to get into the midland counties; or is there still a duty upon them if carried by sea to the eastern or southern coasts of England? They are at present a national loss, and might be a great boon to the cottager. I think Count Rumford has a plan of mixing them with clay, to economise the fuel and retain the heat: has it ever been practised?

By way of making you acquainted with some of my opinions, I have sent a separate paper upon the corn laws, which you are at liberty to transfer to the *Country Times**, if they think it worth insertion. From it you will partly judge that my opinions are not at all in favour of cooperative societies. I think it is doing away, in a great measure, with the division of labour; or even admitting that they were all industrious, and each stuck to his employment, what chance is there of holding together? Will no mischievous, lazy, or designing man ever find admittance into such societies? An industrious man, pursuing one line of business, studiously living within his income, and carefully placing his savings in a savings' bank, or other good security, may even now raise himself in life, as I have no doubt many of your correspondents in this Magazine have done; and, I should think, far more safely than when they have to depend upon others' exertions, and even honesty. I hope to see the day when, by the freedom of trade, and taking the taxes off the productive labourer, the demand for labour may be so great, and wages so high, that one half of the labourers in the kingdom may inhabit such houses as you have designed for them.

With respect to waste lands, where these are what are called inferior lands and private property, never doubt but that they will be cultivated as soon as ever the price of corn rises high enough to allow them to be so; but it must be by the plough or some other machinery. The extra-produce

* The article alluded to appeared in the *Country Times* of May 10.; and as we consider it of great importance to disseminate the opinion of an extensive farmer at rack-rent, on a subject in which he is so deeply interested, we shall probably give it in a future Number. — *Cond.*

by the spade can never compensate for the difference of expense; but, certainly, much may be done with those in the hands of corporations, &c., and kept as commons. Many of these do not yield a quarter of the rent of what they might be made to do if properly cultivated. The expense of an act of parliament deters the owners of many of the smaller ones. A general inclosure act, reserving the power of settling disputes to the quarter sessions or assizes, might materially expedite the object.

I have thus, perhaps tediously enough, detailed some facts and opinions which may assist you in your projected work. I have no wish to have any of the observations upon the cottage details in the *Quarterly* published: I only wished to show you that the new plan of building cottages may, in some cases, increase the distress, and the poor's rate, and thus to prevent you from being misled by the visions of Dr. Southey. I am, Sir, &c. — *J. C.*

Our enlightened and much esteemed correspondent, if he thinks that we wish to force the cottage system, has mistaken our meaning; quite the contrary: what we say is, when there are to be cottages, let them be good ones, and never without large gardens attached. We are most happy to find such an able practical advocate for free trade hoping "to see the day when, by the freedom of trade, and taking the taxes off the productive labourer, the demand for labour may be so great, and wages so high, that one half of the labourers in the kingdom may inhabit such houses as we have designed for them." Free trade, parliamentary reform, and a national system of education, may be said to comprise all that we wish for. We wish we could say that we hoped to see any of them, for any one would lead to the other two. — *Cond.*

Education as a Check to Population. — My reflection on the point has been but little, but that little induces me to think that this can scarcely be the result. Labouring men are paid according to their absolute wants: if their labour could be purchased at a lower rate, it would be done; for it is commerce, not benevolence, that is the buyer. At present, the workman labours but six days out of seven, and yet he receives as much as will support him the seven days; for this reason, and this reason only, that his absolute wants require that it should be so; and, were the working days reduced to five, he would still receive as much. Now, this is precisely the case supposed by you (Vol. V. p. 694.): there is no commercial difference between the same amount of wants supplied by a smaller amount of labour, and a larger amount of wants supplied by the same amount of labour. Your creation of wants, therefore, would not check population; it would merely raise the price of labour. This very principle regulates the salaried portion of middle life: the appearances necessary to be kept up in given situations operate as powerfully on the amount of wages as bread and potatoes on the wages of the mechanic. Many men in middle life do not marry, it is true, because they cannot support a family; but population is not therefore checked, it is only of a different kind — a population of bastards. Nature cannot be bridled; and such a result as the prevention of marriage would be dreadful: either disease and death from promiscuous intercourse; or the introduction of sin and sorrow into the bosoms of innocent families, and the turning of this lovely world into a universal hell. The dreams of overstocking the world, when so large a portion of its surface is uncultivated, always put me in mind of the worthy alderman who lamented so bitterly, because that in 800 years there would be no more coals at Newcastle. Why, even now, steam is likely to supersede draft-cattle, and leave the land at present employed in raising food for them, to the production of food for man. A thousand ways will suggest themselves by which the Creator of man could remedy his over-increase; sealing up the womb would leave all to be enacted over again. Surely we might leave a little to God, and not suppose him such a bungler, or such a ferocious parent, as to botch up a system under which his children would be eventually driven to devour each other. *Edw.*

cation will never check population ; but it will do infinitely better : it will make a man better able to support his family, and it will make that family more comfortable, by the creation of absolute wants, which to withhold would shake the kingdom to its centre. By giving the capability of emigrating, it will further the intentions of Nature in spreading civilisation over every portion of the habitable globe, and approximate the consummation of that felicity which must have been in the designs of a beneficent God when he laid the foundations of this lower world. — *N.*

Garden Libraries. — Sir, As you request any and every one to give their opinion concerning garden libraries, permit me, as a Cockney gardener (I mean one of only a few yards square), to add my observations. Any method that can rid *us* of the obstinate ignorant set of blue-apron men that we are obliged in general to employ, is a point devoutly to be wished. I recently asked a man, who had been employed for fifty years as a gentleman's gardener, if he had seen such a book (mentioning *Lawrence on Gardening*), and was answered, "Books! What can I learn from books? What can they teach me more than I know?"—I replied, "You will learn from them what the Scotchman has learned."—"What's that?" was the instant question; and directly answered, "To get the superior places as master gardeners, and keep the Englishmen as labourers." My man was, as you may suppose, totally silenced. I have a large collection myself of the old writers on the subject, which I am in the habit of lending to my friends, and sometimes to my workman, if he wishes to beguile his evenings in improving himself, and to keep from the alehouse; but of the latter set I can find but few, from the natural, or unnatural (which you please), aversion the common-place gardeners have from book-learning. I need not tell you how many articles have been brought forward as new discoveries that are mentioned by the old authors; and how vexed must the well informed, but unread, man be, when he finds he has been imposed upon in this way! I therefore give a hearty concurrence to any thing that can improve so useful a set of men. As I am not likely to ever arrive at keeping an establishment of the kind, I can only say, that, if I did, I should consider a library as a necessary *tool*. I therefore, situated as I am, think small horticultural libraries, in the villages round London, would be of excellent service: the gardeners to subscribe a small weekly sum for the privilege of using the books, and the employers to be honorary members on paying a certain sum down, or annually, towards the support; by which means a library-room might be made, and members appointed among the working-men, at a small allowance, to keep things regular. This would be truly useful, as conversation, one with the other, would greatly promote knowledge. Were I to say that there are ten thousand small gardens round London that are much injured by the obstinate and ignorant, I should be within bounds. As I have many duplicates of the old writers in my possession, and on many of the fly-leaves there are my notes of what have been copied almost *verbatim* by the moderns, and what have been put forward as new discoveries, I shall willingly give a collection to any establishment in my neighbourhood which I think will be of service. I am, Sir, yours, &c. — *Superficial. Brixton Villa.*

Landscape-Gardeners. — Mr. Morris's figure and description (Vol. I. p. 116.) well represents what the writer wishes to convey: but I have invariably observed that all landscape-gardeners (fashionable ones) fall short of producing a handsome effect upon estates, whatever they may advance upon the subject; and although the nobility and gentry are biassed by their agents, who are generally better educated than gardeners, I feel convinced that an experienced gardener is capable of producing a much better effect, and I am confident with much less than half the expense always incurred by employing those useless intruders of the profession, generally called landscape-gardeners, although in your Introduction (Vol. I.) you appear to be favourable to a different opinion. Like many land stewards, they wish to

impress on the employer (and generally accomplish it at his expense), that a gardener ignorant of every thing but the drudgery of his profession is all that is required ; whilst they themselves creep in sometimes, to the total ruin and disgrace of the employer. I am fully persuaded, that if a nobleman would condescend to converse half as familiarly with his gardener as he generally does with his land agent, his estate, and consequently his pocket, would be benefited. — *Jno. Newman. R. B. Garden, Mauritius, March 12. 1830.*

M. Rinz's Criticisms on Landscape-Gardening in England. — Sir, I could not help being struck with M. Rinz's criticism (Vol. VI. p. 31.) on the English style of landscape-gardening, while making his tour in England. Although I have but little leisure time, and no doubt you are furnished with matter much more profitable than this subject will afford, yet I think M. Rinz's efforts to exhibit the English artist as void of taste should not pass unnoticed. Under this impression I venture to offer a few brief remarks on the subject, and probably, if you think them worthy of a place in your Magazine, you will do me the favour to insert them. M. Rinz says, "It seems that the taste is by no means improving in this country (England), but rather remains in its first or old principle; while we in Germany endeavour to improve on them." Is not this a bold, or rather an assuming, assertion? What are we to understand by it? Must it not be allowed that much was done to abolish the "*old principle*," in the days of Wheatley and Brown: and is it possible to suppose that this particular branch of art has not improved since then, after the long practice and valuable publications of Repton, Loudon, and numerous other eminent men, some of whose works must have been seen by M. Rinz; unless he made a determination while on his tour to wink at them, and bias his mind with the defective, of which, undoubtedly, much yet exists in all countries as well as in England, and more or less even in Germany, where the proprietors happen to have no taste for improvements, or to deviate from the "*old principle*." I need not dwell more on this point, as it will be perceived M. Rinz has travelled too far amongst the defective parts of landscape-gardening in England, and stepped too little into its beauties. If I understand the plan right, which appears in the same Number with his remarks, and which he says "his father executed," I must confess it shows no extraordinary specimen of good taste or style. An English artist, I am sure, would blush to exhibit a plan like that as a design of "*one of the first places in*" England. In the first instance, I should say the combination which M. Rinz endeavours to establish is much destroyed by a public road, dividing the fields, vineyards, &c., from the pleasure-grounds, as it seems to pass at least three parts round it. The walks, seats, and temple are too near the public road to afford retirement. Perhaps it is a taste peculiar to the Germans to hear and see all they can. The junction of four walks, broad spaces of gravel, and too many entrances, are bad; the dug patches, or beds, in the lawn are too stiff, and also too much alike in their formation. The flower masses diverge principally from the walks in right angles, instead of being contiguous and more parallel to them. Instead of the formal flower masses, it would be much more characteristic to have various-sized groups naturally blending with the shrubs, so that the lines between them and the flowers may not be traced as we see them in the plan, allowing the large and most conspicuous kinds to range backwards. There should also be various-formed masses of flowers surrounded with grass lawn, of different breadths, broken or varied with groups of shrubs in order to produce effect, as well as to afford convenience of approaching the flowers for inspection. What M. Rinz means by saying, "We commit a great fault in dividing the park from the pleasure-grounds, and the pleasure-grounds from the flower-garden," I must confess I am quite at a loss to understand. Is it that we should have no fence betwixt the park and the pleasure-grounds? &c.,

of course M. Rinz cannot intend that cattle should be admitted into the park, which would be a great evil, as the plants in the pleasure-ground would be in danger of being destroyed by them; whereas their exclusion from the park would cut off a grand feature in park scenery. To have a meadow, park, flowers, and shrubs, all mingled together, would exhibit a poor figure, and afford but little pleasure to an admirer of order and beauty. I think he cannot mean that the park and pleasure-grounds should be united in appearance by invisible fences; for this is done more or less where the style is modern throughout the kingdom. However, be this as it may, I differ *in toto* with M. Rinz, and say, "Let a park be furnished with groups and masses of different extent of fine, ornamental, and picturesque trees, connected with self-protecting bushes and low-growing trees, such as black and white thorns, hollies, whins, &c.; and let the dressed ground be varied with ornamental trees and shrubs, so as to unite in appearance as much as possible with the park, but to be entirely separate. I do not mean to say there shall be no walks through the park; but, on the contrary, I should recommend them, when they would lead to any thing of importance. In all cases there should be a principal flower-garden, at a moderate distance from the house, that it may be resorted to without traversing the whole grounds for the sake of inspecting any favourite flower or flowers. Indeed, it oftener happens than otherwise that a short walk is more agreeable than a long one; and what can be more gratifying than a garden well varied with valuable flowers and shrubs? At the same time I should have masses of flowers at greater and less distances, to some extent from the principal flower-garden; diminishing the number of groups and masses of the most valuable kinds of flowers, as we approach the woods or forest grounds, and introducing, where it is necessary, the wild and uncultivated kinds in masses with the commoner shrubs. To give M. Rinz his due, the attempt he has made to group his plants in the lawn is not without some merit; and that is all which may be said favourable of the design in question.

As brief as I have endeavoured to be, I feel that I have already trespassed too much upon your pages: and therefore I would only add, that, after all which has been said about the defects of landscape-gardening in this country, I feel sufficient courage to assert, that the most picturesque, the most tasteful, and the most beautiful places in the world are to be found in England; and before the English landscape-gardeners are to be dictated to by the Germans, we must be convinced of their superiority by some better specimen than the plan of Johanisberg, which M. Rinz, in his prescriptive wisdom, has thought proper to lay before us. I am, Sir, &c. — *Joshua Major, Landscape-Gardener. Knowstrop, near Leeds, May 13.*

Láthyrus venosus. — Sir, In p. 281. you take particular notice of the *Láthyrus venosus*, figured in Mr. Sweet's *British Flower-Garden* for March. I have to acquaint you that the plant is already in Scotland; I brought seeds of it from Canada in 1823, from which plants were raised in my brother's garden, at Dalry, Edinburgh, some of which I gave to P. Neill, Esq., and Mr. M'Nab of the botanic garden. I stated to them, that I felt confident it would make an excellent forage plant, provided it grew as luxuriantly in Scotland as it does on the banks of Lake Ontario, where I gathered the seed. It grows in abundance on the narrow neck of land which forms the Bay of York, Upper Canada, called there *the Island*. It grows equally luxuriantly on the clay banks in the same neighbourhood, as it does on the drift-sand of the beach. Cattle are very fond of it; and I observed that the plant retains its verdure a considerable time after the seeds are ripe. — *T. Blair, Gardener to John Martineau, Esq. Stamford Hill, Middlesex. July 19.*

Kennèdia monophýlla. — In the *Botanical Register* for July, a variety of this plant is figured from Mr. Rollinson's, supposed to be new. About sixteen years ago I raised the same variety in Scotland, from seeds of the common *K. monophýlla*. I propagated it, and sent plants to Bothwell

Castle and Dalhousie Castle : from the former place I received seeds of it two years ago, from which I raised four plants : three have flowered this spring, two were the same as Mr. Rollinson's, and the other proved to be the common variety. At the time it first flowered with me in Scotland a specimen was exhibited at the Caledonian Horticultural Society, but I believe it has not been seen about London until this spring, as I made enquiry at several nurserymen previously to receiving the seeds from which my plants were raised. A fine plant of it is in a pit at the Clapton nursery, amongst other natives of New Holland, and grows vigorously. — *T. Blair.* July 19.

Amarýllis solandræflora is mentioned by Mr. Sweet (Vol. I. p. 32.) as continuing to grow all the year. What he has advanced upon this head I cannot doubt, not having cultivated it in England ; but I can assure you, that in its native climate, Brazil, both that variety and the other species of *Amarýllis* (I believe figured in Catley's *Plants*) from Mr. Brookes, although described as two distinct species, are only varieties of my *A. longiflora* ; and although I have not the credit of introducing them into England (amongst many other plants), I have not only a letter to prove the receipt of them, as sent by me from the north part of the Brazils (not of Cayenne), but also a passage " to know if I approve of the name *solandræflora*," &c. Among my numerous pencil sketches of plants of that most interesting country, I made one of the original species, which I sent to Mr. Lee at Hammersmith, from the seed of which I produced three distinct varieties. The original species and one of the varieties, as far as it has come to my notice, have not flowered in England. They all shoot up their flower-stalk, without being accompanied with leaves, precisely the same as *Belladónna*, and the leaves soon appear afterwards. — *Jno. Newman. R. B. Garden, Mauritius, March 12. 1830.*

Verbena chamædrifolia is not my name, but that of Jussieu, first published in Persoon's *Synopsis*, but overlooked by Mr. Lindley when he gave it the name of *Melindres* in the *Botanical Register*. — *R. Sweet. Pomona Place, March 29.*

If the *Pollen of Plants* (Vol. I. p. 68.) has no effect in producing different varieties in size, flavour, colour, &c., what part of the plant are we to imagine the production of a new variety to spring from ? In a natural state plants seldom produce varieties, and the favourers of hybrids collect the pollen of the one for the impregnation of the other ; and it appears well proved that vegetables have different sexes, and are carried on by the same laws of the Almighty as animals ; it cannot be wholly the result of chance or climate. I, however, consider hybrids as unnatural objects, though they are occasionally more handsome than the parent. Man himself appears to be the agent which produces them, whether in animals or vegetables. — *Jno. Newman. R. B. Garden, Mauritius, March 12.*

List of Fruit Trees. — Sir, Your correspondent (p. 230.), in answer to J. S. L.'s query, I think would have conferred a still greater favour if he had stated the shape, size, and colour, and when in use ; and, as he states that his employer is one of the greatest fruit-growers in that part of the country, he might have easily done so. The following is a list of American fruit trees. The American nurserymen mention the time that the different sorts of fruit trees are in use ; and I think it would be a great improvement if our nurserymen would adopt the same plan.

A Selection of the most esteemed American Fruit Trees, selected in the autumns of 1827 and 1828, from the *Botanic Garden, New York*, for the Pomological Garden, near Lancaster, belonging to M. Saul.

1827. 1. Monstrous Pippin, or New York Gloria Mundi, has weighed 35 oz. ; Oct. to Jan. 2. Surprise (yellow outside and red to the core within) ; Nov. to March. 3. Sine quâ non (one of the finest flavoured early apples) ; July. 4. Federal Pearmain ; Nov. to March. 5. Red Bald-

win Pippin (one of the most esteemed American apples); Nov. to March. 12. Prince's St. Germain Pear (originated by intermixture between the old French St. Germain and the St. Michael); Nov. to February.

1828. 1. Yellow Rarripe Peach; August. 2. Green Catherine Freestone (not the English Catherine); New. 4. Esopus Spitzenburgh; Nov. to March. 5. Federal Pearmain; Nov. to March. 6. Large Red and Green Sweeting; Aug. to Sept. 7. American Nonpareil; Oct. to Nov. 8. Yellow Harvest (finest early apple); July. 9. M'Keen's small Russeting; Jan. to April. 10. Red Baldwin (very fine); Nov. to March. 11. American Wine; Oct. to Feb. 12. Williams's Favourite; Jan. to April. 13. *Sine quâ non*; July. 14. Moore's red Winter Sweeting; Dec. to June. 15. Blood Apple; Nov. to March. 16. Large double Almond; rare. 17. Pope's Scarlet Major Pear (beautiful); Sept. to Oct. 19. Many's Italian Apricot (a Seedling from a stone received from Italy); New. 20. Bowne's Imperial Russet (the largest of all Russets, and highly esteemed); Nov. to April. 21. Duane's Purple Plum (monstrous); New. 22. Prince's Duke Cherry (the largest of American cherries); June.

Autumn, 1829, from the *Albany Nursery, North America*.

1. Pound Peach. (See Gard. Mag., Vol. III. p. 347.) 2. Washington Plum; August. 3. Seek no further Apple; Oct. to Feb. 4. Green Newtown Pippin; Nov. to May. 5. Yellow Newtown Pippin; Nov. to May. 6. Moore's Apple (a fine winter fruit); Dec. to June. 7. Jonathan Apple; Dec. to March. 8. Cayuga Redstreak; Dec. to March. 9. Beauty of the West; Dec. to March. 10. Swaar (a favourite winter apple); Oct. to May. 11. Ortley. (See Gard. Mag., Vol. III. p. 347.) 12. Vermont Nonpareil; winter. 13. Straat (a very fine autumn apple); Sept. to Jan. 14. Sapsen Apple; Aug. to Oct. 15. Pomme Grise (a favourite Canada apple, of a flattish form and russet colour, streaked beautifully with red, and keeps till March). 16. Fameuse (from Canada; a pretty large apple, of a beautiful dark red, with a little yellow on the side from the sun); Nov. to Feb. 17. Genessee Pear (a fine autumn variety); New. 18. Washington Pear; Sept. to Oct.

American Fall Pippin and Pound Apple from Ronalds and Sons. — *M. Saul. Pomological Garden, near Lancaster, June 1.*

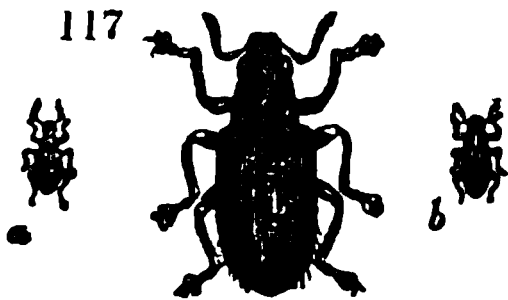
Wired Walls for training Fruit Trees. (p. 229.) — Wherever there is a free current of air between the shoots and the wall I entirely disapprove of wiring, from two years' experience. The benefit of the wall is thereby considerably lessened, and the flavour of the fruit often deteriorated. W. M. may find the practice to succeed in some parts of South Britain, but never in the North. I consider nailing, the culture being the same, the best practice. W. M. is right in not wishing his trees to flower early in the open air: to have fine fruit much depends on the strength of the anthers, bursting and discharging plenty of pollen, with the vigorous state of the stigmas to receive the same; and this process is always best performed in a high temperature. — *James Housman. Toft, April 15.*

Erratum. — I find in copying my *jaunt* to the Lothians (p. 495.), Ormiston Hall is twice spelled Arniston Hall. Your readers will be kind enough to correct this error with the pen, writing *Orm* for *Arn*. — *A. Gorrie.*

ART. V. *Queries and Answers.*

INSECTS on Young Peas. — I enclose you a few of a kind of insect which appeared in great numbers, with the warm weather at the end of last March, on some rows of peas of mine, about 2 in. high. The small and darkest-coloured (*fig. 117. a*) are the males, the others (*b*) are the females. The peas are now only fit to be dug in; and I also send a few of them for your

inspection. The insects feed only by day, when the sun is bright, five or six of them being on each plant. When I go near the row, they fold themselves up and drop down, some on the ground, and some in the axils of the leaves, where they lie for the space of a minute, appearing like small bits of earth. I have never seen them fly, but they run very quick. I have dusted the plants with lime and soot, but without effect. I have



upwards of 300 ft. of row, the greater part of which is worse than the specimen sent, and none better. This same species of insect, I recollect, nearly destroyed some double-blossomed peach trees, by stripping them of all their leaves, two years ago, in the pleasure-grounds here. A hint as to what method I may pursue to destroy the insects without injuring the plants will greatly oblige, Sir, &c. — *W. P. Vaughan. Archdeaconry, Brecon, April 18. 1830.*

Talc for Green-house Sashes. — I should feel myself greatly obliged would some one of your numerous correspondents inform me where talc is to be purchased ready prepared for green-house sashes, and price per square foot? — *A Great Friend to the Gardener's Magazine. Birmingham, July, 1830.*

Destroying Daisies. — Sir, Having the management of a lawn, which is so thickly covered with daisies that it never looks well more than one day after it has been mown, permit me, through the medium of your miscellany, to enquire if any of your correspondents can inform me how they may be destroyed without injury to the grass? Yours, &c. — *J. July 20. 1830.*

Why not cut them out with a sharp spud, taking care not to remove any of the earth, and drop a few grass seeds in the naked space? Salt will kill the daisy, but it will render the ground unfit for any other plant till the salt is washed down by rains. — *Cond.*

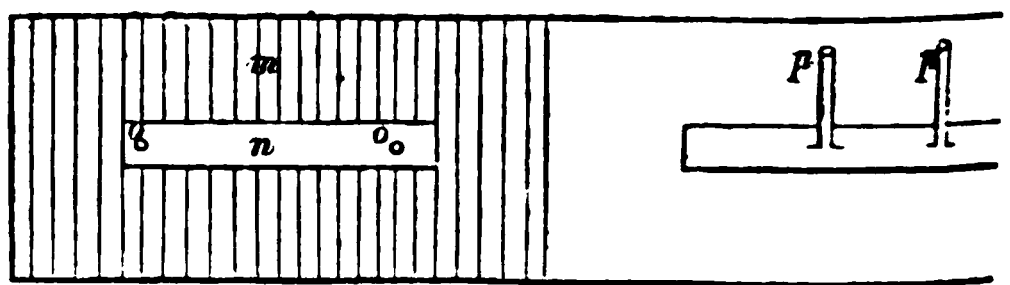
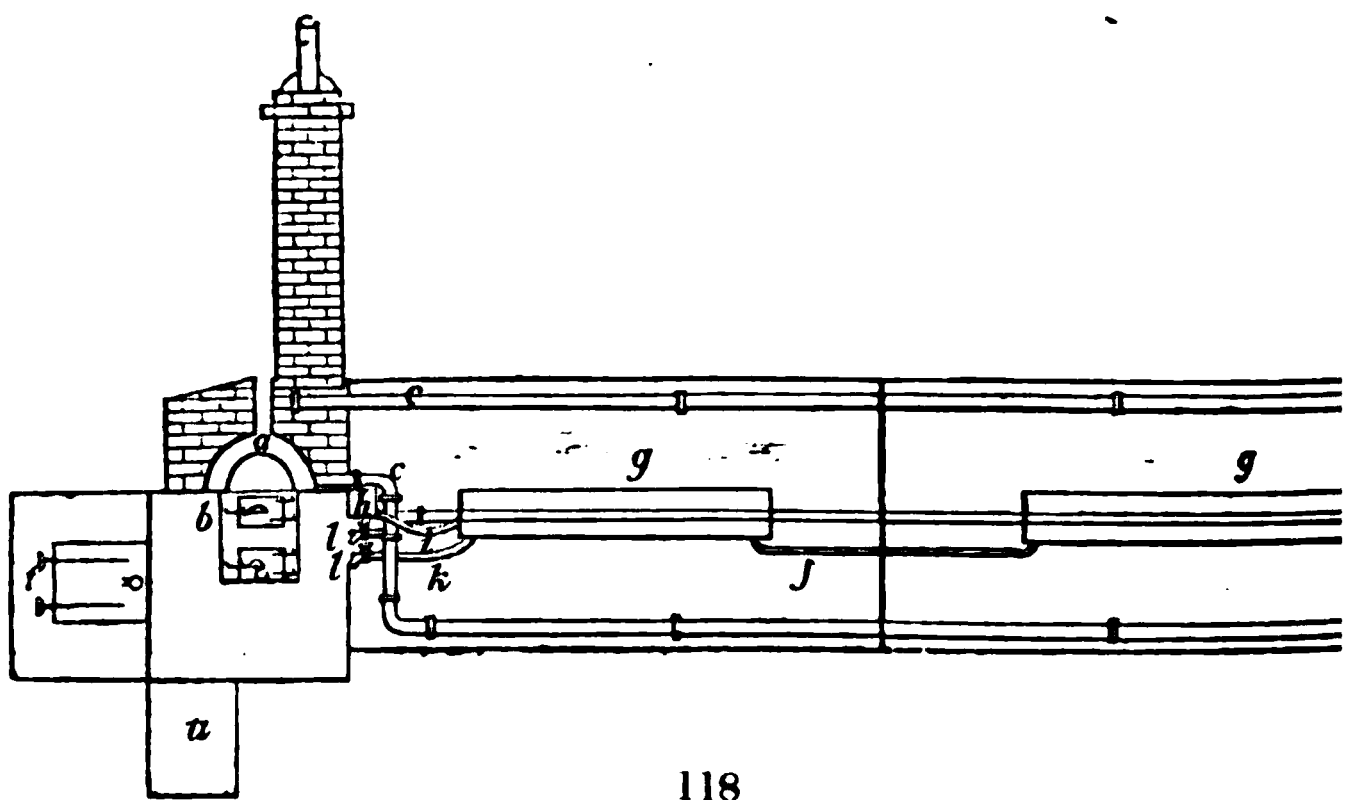
Trees suitable for a certain Situation. — At the approaching removing season I shall plant a piece of low land, subject to frequent inundations in rainy seasons; the soil a retentive loam, of a good depth, say 4 or 5 ft., and the situation much exposed to winds. I shall be grateful would any of your friends inform me the sorts of trees most likely to succeed in such a situation. — *A Great Friend to the Gardener's Magazine. July, 1830.*

Veronica agræstis is plentiful here in cultivated grounds and dry pastures; at least it answers the description given in your *Encyc. of Plants*, except that it has a *white flower*. Is it another plant or a variety? — *John Morgan. Southampton, June 21. A variety only. — Cond.*

The Affane Cherry. — In Mrs. A. T. Thomson's *Life of Sir Walter Raleigh* it is mentioned, that he brought "the celebrated Affane cherry" from the Canary Islands, about the same time that he introduced the potato from Virginia. Can any of your readers inform me what name this Affane cherry is now known by, since it is not mentioned in your *Encyclopædia*, nor in the Horticultural Society's *Catalogue of Fruits*? — *John Stuart. Near Ramsgate, July, 1830.*

Mr. Saunders's List of Pears. — If Mr. Saunders would furnish the complete list of pears he promised, with notices of their peculiarities as to general habits, modes of fruiting, and degrees of hardihood and flavour, he would confer a favour on me, and, I think, many others; and I wish some of your other practical correspondents would give some evidence concerning the quince stocks, which would then tend to set the matter at rest. I have little doubt the swan's egg is good for that purpose; but this amounts to twice grafting or budding. — *R. Errington. Oulton Park, June, 1830.*

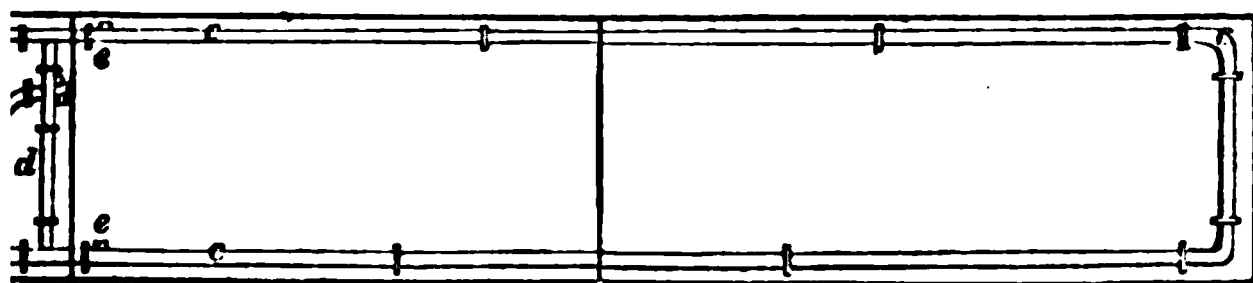
Heating Pits by Hot Water Pipes. — Sir, In answer to the questions of R. H. R., dated Feb. 24. 1830, I beg leave to state my opinion, that heating pits by hot water pipes has decidedly the advantage of any other system I have



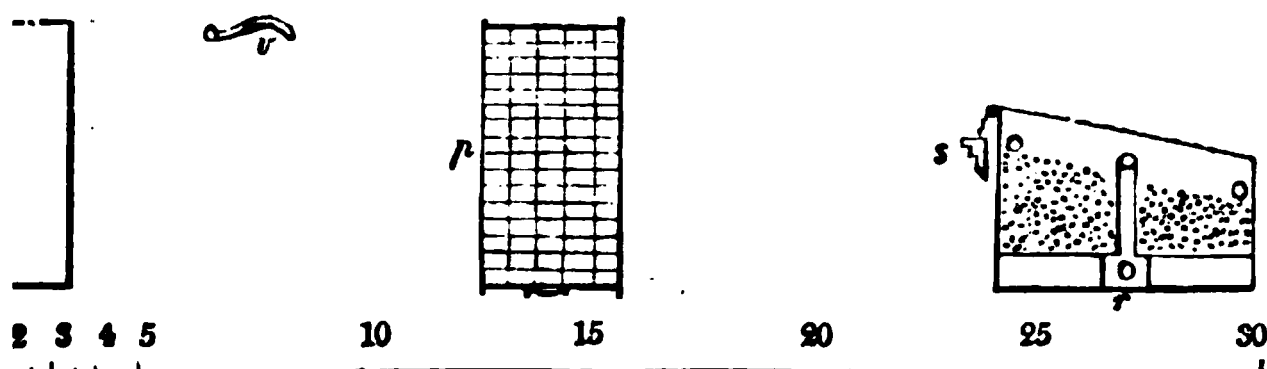
tried. In pits recently constructed in Sir Giffin Wilson's gardens, Woburn House, near Beaconsfield, Bucks (which were left to my direction), I have grown cucumbers, French beans, potatoes, strawberries, and melons to perfection; and, as they are, I believe, the first pits which have been heated at bottom on the following plan, I subjoin a sketch. (*fig. 118.*) The wall is built of 4-in. brick-work, the back 4 ft. high, the front 2 ft. 9 in., 55 ft. long, and 6 ft. wide; it is divided into four divisions, but the two next the boiler are heated at bottom. The boiler (*a*) is a plain dome: *b* is the fireplace. The heated water passes out of the neck of the boiler into a 3-in. pipe (*c*), going all round the pits, and entering the bottom of the boiler. *d* is a branch cross pipe, flanged to back and front main pipe in the middle of the pit; *e e*, stop-cocks, to turn the water off if not wanted in the third and fourth divisions. *f* is a 2-in. lead pipe flanged to pipes (*d* and *c*) at the bottom of the boiler, passing through two long wooden boxes or troughs (*g g*) lined with lead (the first box 7 ft. long, 1 ft. wide, 9 in. deep, the second 9 ft. long), and filled with water from a small cistern (*h*) in the end of the wall, close to the fireplace. *i*, a 1/2-in. pipe, going from the cistern, and soldered to box *g*. The one box fills the other through the 1/2-in. pipe (*j*), which serves to fill and empty. *k* is a small pipe, soldered to bottom of box *g*, with a cock (*l*) to empty both at pleasure. The water circulates freely, and very soon warms that in the boxes, causing a fine moist bottom or under ground heat. *m*, a bottom made of wooden rails, 2 in. apart, laid over the pipes and boxes; *n*, a thin board laid over this bottom, exactly above the boxes, to prevent the mould from dropping through, on which and all over the wood-work is a layer of turf. This bottom stands clear of the pipes and boxes, forming a chamber under the mould. Two holes (*o o*) are cut in the board, and two tubes of 2-in. pipe, 2 ft. 9 in. long, set upright on the holes, to take both heat and steam up to the surface of the bed among the leaves, which I find very congenial to the growth of cucumbers and other plants. *p p*, the upright tubes or pipes, with lids to cover them when the steam is not required; and

if a dry heat only is wanted, the water must be drawn off from the boxes. *q* is one of the lights; *r*, end view of the pit; *s*, air stick, or tilt; *t*, place to hold coals under ground, with hatchway to let them down; *u*, place to receive the ashes; *v*, key to turn the cocks.

I beg to observe, that I have no doubt but the same fire would heat the pits if built to 100 ft. in length, or placed in another row. The apparatus was erected by Messrs. H. and D. Grainge of Uxbridge, whose attention



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and workmanship are highly satisfactory. I am, Sir, &c. — *John Cameron. Woburn House Gardens, Bucks, June 18.*

Canker in Peach Trees. — Sir, The extent of the kitchen-garden at this place is about an acre within the walls, which are entirely of brick. The east, south, and west walls are 12 ft. high; the wall on the north side is 13 ft. high, and 300 ft. long, with a border on the south side of it 18 ft. wide. It is not more than twenty-eight years since this wall was built and the border made; and it has been appropriated to the growth of peaches and nectarines from that time to the present: but, unfortunately, peach and nectarine trees cannot be kept in existence against this wall more than five or six years. No trees can thrive better, or show a more healthful appearance, than the trees do on this wall for *the first three or four years after being put in*: but at the end of that time, all the lower branches of the trees are affected by the gum and canker, which soon destroy them; the remaining part of the tree begins to bear evident marks of weakness and decay; and this weakness and decay is succeeded in the following spring by swarms of the green fly, and a still farther increase of the gum and canker, which, for the most part, terminate in the destruction of the trees, or in rendering them worthless. These mortifying circumstances always take place at the time the trees are just arriving at a good bearing state.

With respect to the border, it has been made and remade *twice over*; the last time, it was renewed under the direction of the late Mr. Lee, of the Vineyard, Hammersmith, who also pointed out the spot where the best soil was to be taken from to renew the border; but, after all, the trees have failed twice since, it being supposed that the roots perished after getting out of the good upper soil into the sour clay. The border is at present about 3 ft. 6 in. deep, to all appearance of as good soil as is to be got any where near this place; the bottom or subsoil of the border is a ~~stiff soil~~

clay, something nearly approaching to brick earth; and at 2 ft. below this sour stiff clay it is all chalk, which is the case with all the land near to, or situated between, the Chiltern Hills, as this place is; the situation is a wide valley, which opens to the north into the Vale of Aylesbury. I ought to inform you, there is a double row of sycamores and limes at the back of the peach and nectarine garden wall. The branches do not overhang the wall, but some of the sycamores are within a few feet of doing so. I observe that the foliage of those sycamores is every year, in the months of May and June, covered by thousands, and tens of thousands, of the green fly. I have heard it asserted that the green flies which infest the sycamore and lime do not infest the peach and nectarine; for my own part, I cannot observe any difference by comparing them together, as I have frequently done: they are all, apparently, the same kind of insects, at least as far as I am able to judge, from colour, shape, and size. On turning to the article Insects in your *Encyclopædia of Gardening*, § 2224., it is said, "The insects that infest plants are almost as numerous as the plants themselves, almost every species having a particular insect, which it seems destined by nature to support." This may be true in hundreds of cases, but certainly does not hold good in all. The red spider, for instance, is an insect that infests the peach, nectarine, vine, French bean, melons, and many other plants, in a dry season, and those that are kept in a dry heat. On turning to the article Red Spider (read "Spider") in your *Encyclopædia*, it says, "The only two British species which infest plants are the *A'carus telarius*, and *A'carus holosericeus*." I have no motive for noticing these things, only from the circumstance of the sycamores and limes being so very near the garden wall, and being, at the same time, as I observed before, so much infested with the green fly at the time those insects attack the peach and nectarine trees. If you can suggest any thing whereby the evils I have mentioned may be got quit of or mitigated, or can point out where the best information is likely to be got on this business, it will be considered a great and lasting obligation conferred on, Sir, &c. — *R. Watts, gardener to R. G. Russell, Esq. Chequer's Court, Wendover, Bucks, August 16.*

We recommend the above letter to some of our practical friends who have lately written on the peach, the pear, and the preparation of borders. — *Cond.*

ART. VI. *Horticultural Society and Garden.*

JULY 20. — *Exhibited.* A collection of Carnations and Picotees, from Mr. Hogg of Paddington. Princess Augusta Pelargonium, Potentilla Russelliana, and Georgina flowers, from Mr. Russell, Enham Nursery, Battersea. Black Hamburgh Grapes, from Mr. George White, gardener to Sir Rowland Hill, Bart., Hawkstone Park, near Shrewsbury. Fruit in Spirits of the Lucuma, from Alex. Caldcleugh, Esq., of Valparaiso. A small Gourd, from the Hon. T. H. J. Strangeways, F.H.S.

Also, from the Garden of the Society. Four sorts of *Rosa indica*; Rose Bourganville; Drummond's Thornless Rose; a collection of Garden Roses; *Echium violaceum*; *Calceolaria arachnoides*; *Anthemis arabica*; *Eschscholtzia californica*; *Clintonia elegans*; three varieties of *Verbena*; *Silene compacta*; five varieties of *Pentstemon*; *Galardia aristata*; twelve varieties of *Oenothera*; *Clarkia pulchella*; two varieties of *Papaver*; *Maloja malacoides*; *Petunia nyctaginiflora*; *Coreopsis lanceolata*; *Collomia grandiflora*; three varieties of *Phlox*; *Centaurea Cyanus*; nine varieties of *Campánula*; *Loasa nitida*. Four sorts of Pears; two sorts of Apples; Wilmot's new Early Orleans Plum; two sorts of Apricots; Elton seedling Strawberry; twenty-six sorts of Gooseberries.

Aug. 3. — Read. The Meteorological Journal kept in the garden during the year 1829.

Exhibited. — Duchess of Oldenburgh Apples, from Mr. Francis, Ivy House, Canterbury. Moorpark Apricots, from Mr. J. G. Fuller, F.H.S. Seedling Currants, from John Williams, Esq., of Pitmaston.

Also, from the Garden of the Society. Three sorts of Pears; five sorts of Apples; *Prunus cerasifera*; five varieties of Apricots; two sorts of Cherries; a Golden Mignonne Peach, accidentally ripened prematurely in consequence of the death of the upper part of the branch to which it belonged. An Otaheite Pine-apple, weighing 5 lbs. This proved to be a very bad variety. A collection of flowers, consisting of *Anthemis arábica*; *Iberis umbellata*; *Tagetes lucida*; seven sorts of Pentstemons; three varieties of Chelone; *Málope trifida*; *Agératum mexicanum*; *Calceolària arachnoides*; *C. new sp.*; *C. pinnata*; *Pyrèthrum inodorum*; eight varieties of *Ænothèra*; two sorts of *Loàsa*; two sorts of *Coreópsis*; *Mimulus moschatus*; *Eschschóltzia californica*; two sorts of *Verbena*; seven sorts of *Phlox*; a collection of tall, dwarf, and anemone-flowered Georginas.

Aug. 17. — Exhibited. Specimens of an amber-coloured Grape from Portugal, from C. Holford, Esq. F.H.S., apparently some variety of the Chasselas. Sir Abraham Pytches's Black Grape, from C. Holford, Esq. F.H.S. Sweetwater and Black Prince Grapes, from the same. Black Hamburgh Grapes, from Miss Prest of Lewisham. These were very beautiful specimens.

Also, from the Garden of the Society. Montagu Cantaloup Melon; Melon of Siam; long green-fleshed Melon; *Psidium Catleyanum*; eight sorts of Pears; eight sorts of Apples; seven sorts of Plums; Early Anne Peach; a collection of tall, dwarf, and anemone-flowered Georginas; *Iberis umbellata* var.; *Verbena chamædrifolia*; *Eschschóltzia californica*; *Málope malacoides*; *Cladanthus arábus*; *Senecio elegans*; three varieties of *Coreópsis*; *Agératum mexicanum*; China Asters; *Pyrèthrum inodorum* (double); nine varieties of *Ænothèra*; three varieties of *Nigella*; five sorts of *Phlox*; *Lupinus polyphyllus albus*; *L. polyphyllus*; *L. plumosus*; *L. ornatus*; *Combrètum purpureum*; *Calceolària*, new sp.

Sept. 7. — Read. Account of a case of Malformation in an Exogenous Tree, by John Lindley, Esq. F.R.S. &c.

Exhibited. *Camellia Chandlèra* in blossom, from John Allnutt, Esq. Flowers of Camellias, from the same. A curious Root from Pulo Penang, from J. L. Haythorn, Esq. Double Georginas, from Mr. Russell of Battersea. Guimaraen Plums, from J. Biddulph, Esq. A collection of Apples, and Kirke's fine Plum, from Mr. Joseph Kirke. Sweet Red Currants, and two cross-bred Melons, from T. A. Knight, Esq. A Queen Pine, weighing 4 lb. 1 oz., Tokay Grapes, Muscat of Lunel Grapes, from Mr. William Greenshields. An Apple, unnamed, from N. W. Wickham, Esq. Amber-coloured Portugal Grapes, and Black Grapes of Champagne, from Charles Holford, Esq.

Also from the Garden of the Society. *Coreópsis tinctoria* and *lanceolata*; *Pentstemon atropurpureus* and *campanulatus*; *Cladanthus arábus*; *Málva miniata* and *moschata*; *Iberis umbellata*; *Tagetes lucida*; *Málope malacoides*; China Asters; *Agératum mexicanum*; *Ænothèra tetraptera*, *purpurea*, *Romanzovii*, *viminea*, *quadrivulnera*, *odorata*, and a new variety; *Heliánthus lenticularis*; *Verbena chamædrifolia*; *Catananche cærulea*; *Pentstemon diffusus*; *Sálvia cardinalis* and *Grahami*; *Málva purpurata*, *Escallonia bifida*; *Lupinus plumosus*, *ornatus*, *polyphyllus*, and *polyphyllus albus*; Georginas. Pears of the following sorts: Norman, Amande d'E'té, Orange Bergamot, Sanspareille, Summer Franc-Real, Cuisse Madame, Williams's Bon Chrétien, Orange Tulipée, Augustbirne, Julienne, Archduc d'E'té, Early Bergamot, Pastorale de Christe, Impératrice d'E'té, Waterloo, Ambrette d'E'té, Tresam Prata, Vallée Franche, Deux-Têtes,

Chair à Dame, Hepple. Peaches: Royal George, Grosse Mignonne, Noblesse, Bellegarde, Barrington, Belle Bausse, Royal Charlotte, White Incomparable. Apples: Transparent de Zurich, Drap d'Or, Longville's Kernel, Valleyfield Pippin, Reinette de Laak, Cole Apple, Kentish Codlin, Dutch Codlin, Summer Golden Pippin, Summer Thorle, White Crofton, Large White Colville, Kilkenny Codlin, Scarlet Pearmain, Bedfordshire Foundling, Foxley, Yellow Ingestrie, Pomme de Jerusalem, Wormsley Pippin. Plums: Reine Claude, Violette or Purple Gage. Kirke's, Whitton, Magnum Bonum. Nectarines: Violette Hâtive, Elruge, Golden.

ART. VII. *The London Nurseries.*

EPSOM Nursery. — New or rare plants which have flowered in July and August: —

Class I. DICOTYLEDONEÆ. Subclass 1. THALAMIFLOREÆ.

Ord. Ranunculaceæ. Trib. 4. Helleboreæ. *Aconitum* (Tourn.) moldavicum Bess.

Papaveraceæ. Argemone (Tourn.) Barclayana Penny. In Vol. VI. p. 115., I have adverted to a second perennial species of this genus, but I have erred in stating the flowers to be sulphur-coloured: they are of a delicate cream colour, somewhat smaller than those of *A. grandiflora*. Like the latter species, it began flowering in June, and has already attained the height of 5 ft. I would characterise it thus: — *A. Barclayana*. Perennial; leaves sinuate dentato-spinose; midrib and veins covered with glaucous bloom; calyx nearly spineless; capsule spinose; stigma subsessile. Native of Mexico.

Violariæ. Trib. 2. Alsodineæ. *Hymenanthera* (Banks) dentata R. Br. Loud. Hort. Brit. Supp. p. 472. A curious green-house shrub, native of New Holland.

Frankeniaceæ. Frankenia (L.) pauciflora Dec. A pretty green-house shrub, with pink flowers. Young cuttings root freely.

Caryophyllæ. Trib. 1. Sileneæ. *Dianthus* (L.) ferrugineus L. A beautiful capitate species, with rose-coloured flowers; hardy. — *D. Fischeri* (Spreng.) v. albus. A seminal production of the prototype: an elegant variety. — *Saponaria* (L.) calabrica Ledeb.? A pretty rock-plant, with elegant rose-coloured flowers, surpassing the well known *S. ocymoides*.

Geraniaceæ. Trib. 2. Pelargoniæ. *Pelargonium* (L'Herit.) Webbianum Penny in Hort. Eps. ed. 2d ined. (Guy Mannering of the gardens). This hybrid has been named in compliment to the accomplished Miss Webb, the elegant authoress of *The Mummy*, from which an extract may be seen in Vol. III. p. 478.; who, to her numerous acquirements, is adding, with unparalleled ardour, an extensive knowledge of botany. A most desirable plant, raised from *P. Humei*, which had been fertilised with some unknown kind. — *P. Carelessianum* Penny in Hort. Eps. ed. 2d ined. (Marmion of the gardens). This splendid hybrid, resembling in some respects Lord Combermere of the gardens, has been chosen to commemorate an excellent botanical lady residing in the vicinity of Bath.

Oxalideæ. *Oxalis* (L.) Bôwii Ait., *O. Martiana* Zuc., *O. papilionacea* W.

Subclass 2. CALYCIFLOREÆ.

Leguminosæ. Subord. 1. *Papilionaceæ.* Trib. 2. Loteæ. Subtrib. 1. *Genisteæ.* *Adenocarpus* (Dec.) intermedium Dec. Native of Sicily: a desirable, half-hardy, evergreen shrub, with terminal racemes of fragrant yellow flowers. Cuttings and seeds. — Subtrib. 5. *Astragaleæ.* *Astragalus* (Dec.) dealbatus Ledeb. — Trib. 3. *Hedysareæ.* Subtrib. 2. *Euhedysareæ.* *Desmodium* (Dec.) acuminatum Dec. — Trib. 5. *Phaseoleæ.* *Lupinus* (L.) plumosus Doug.

Melastomaceæ. *Melastoma* (L.) ? *subtriplinervis* Link et Otto.

Caprifoliaceæ. *Symphoria* (Pursh) *microphylla* Spreng. Native of Mexico. A hardy evergreen shrub, with tubular pinkish flowers.

Compositæ. Subord. 2. *Labiatifloræ.* *Mutisia* (Cav.) *arachnoides* Mart. Loud. Hort. Brit. p. 351. — Subord. 3. *Carduaceæ.* Div. 3. *Vernoniaceæ.* *Vernonia* (Schreb.) *flexuosa* Link et Otto. *nec B. M.*, *axilliflora* Link et Otto. A lovely green-house shrub, with lilac flowers : strikes freely. — Subord. 6. *Jacobææ.* *Tagetes* (L.) *florida* Sweet, B. F. G. t. 32. — Subord 7. *Heliantheæ.* *Wedelia* (Jacq.) *aurea* D. Don, Loud. Hort. Brit. Sup. p. 448. A beautiful perennial, with golden-yellow flowers from May to October. Frame; division. — *Zexmenia* (Lal.) *tagetiflora* D. Don, Loud. Hort. Brit. Supp. p. 488. — *Echinacea* (Mönch. et Cass.) *pterophylla* D. Don, Sweet's B. F. G. t. 32. A splendid herbaceous plant, with sweet-scented lilac flowers. Frame.

Campanulaceæ. *Campanula* (L.) *Nuttallii* Penny in Hort. Eps. ined. Sent by Mr. Nuttall as *C. rotundifolia* v. *americana* ; but is unquestionably a very distinct species, distinguished at once by its long and very narrowly linear leaves. An exceedingly pretty plant, about 18 in. in height, with deep blue flowers, flowering from May to October.

Gesneriææ. *Gesneria* (L.) *placentera* Link et Otto ?

Subclass 3. COROLLIFLO'RÆ.

Asclepiadeæ. *Asclepias* (L.) *mexicana* Cav.

Polemoniaceæ. *Phlox* (L.) *tardiflora* Penny. In your admirable *Hortus Britannicus* (Sup. p. 470.) this species seems to be noticed under the name of *P. Sickmanni* Lehm., giving *longiflora* Sweet as the synonyme. The latter is, correctly enough, a synonyme of *P. tardiflora* ; but *P. Sickmanni* of Lehman (to which must revert *P. scabra* Sweet) has lilac flowers, and belongs to a different (the first) section of the genus with smooth stems and a pubescent tube to the corolla. It may also be observed, that, at p. 59. of the same work, there are two very distinct plants referred as varieties to *P. pyramidalis* ; the second variety, *penduliflora*, has recently received its rank by Mr. Sweet, and is scarcely related to that species. The third variety, *corymbosa*, is referable to the same section as *P. Sickmanni* ! and not to the second section of the genus with rough stems and a smooth tube to the corolla ; e. g. *P. pyramidalis*, *P. reflexa*, &c.

Solaneæ. Sect. 1. *Pericarpium capsulare.* *Salpiglossis* (Ruiz et Pav.) *Barclayana* Gard. Mag. v. 6. p. 510. If the flowers of this hybrid are less beautiful than its parents, it amply compensates as a border flower, there being at present upwards of 150 flowers open at the same time. The branches have never been observed to damp off, so frequently the case with the original species.

Scrophulariææ. Sect. 1. *Stamina* (4) *antherifera.* *Lophospermum* (D. Don) *scandens* D. Don in Lin. Trans., vol. xv. p. 349. Sweet's B. F. G. ined. Seeds of this splendid summer climber were presented, with other rare plants, to Messrs. Young, by A. B. Lambert, Esq. It is a native of Mexico. The genus was first placed upon the records of science by Mr. D. Don, who described it from native samples in Mr. Lambert's herbarium, and published the account in the work above cited. Mr. Don points out its affinity to *Maurandya* and to *Antirrhinum* ; but from these it is obviously distinct, both in habit and character. From its amazing rapidity of growth, and profusion of large rose-coloured flowers, it may be pronounced the finest summer climber that has yet been introduced. It has already attained the height of 12 ft., and appears to be suffruticose. Cuttings ; protection. — Sect. 2. *Stamina* (2) *antherifera.* *Calceolaria* (L.) *Herbertiana* Lindl., *C. polifolia* Hook. B. M. 2857.

Labiatæ. Trib. 2. *Satureiææ.* *Pycnanthemum ovatum* Nutt. — Trib. 3.

Ajugöideæ. *Teucrium* (L.) *lævigatum* Vahl. A neat herbaceous perennial, with three or many parted smooth leaves, and pale yellow flowers. The whole plant has a very fetid scent. Division ; frame. — Trib. 4. Mo-

nárdææ. *Blephíllia* (*Raf.*) *hirsùta* *Raf.*? *Loud. Hort. Brit. Sup. p. 468.* — *Trib. 5. Nepétææ.* *Phlòminis* (*L.*) *floccòsa* *D. Don, Bot. Reg. t. 1300.* — *Sálvia* (*L.*) *fúlgens* *Cav. Sweet's B. F. G. t. 59., S. Lindlèyi* *Bentham?*

Verbenàææ. *Clerodéndrum* (*L.*) *hastàtum* *Wall. Loud. Hort. Brit. p. 247.* A beautiful stove climber, with fragrant white flowers.

Primulàææ. *Lysimáchia* (*L.*) *hýbrida* *Mich.* Native of Carolina: allied to *L. longifòlia*, but is a taller and more beautiful plant. It thrives in common earth: division.

MONOCOTYLEDONEÆ.

Orchídeæ. *Trib. 4. Ophryídeæ.* *Habenària* (*Willd. et R. Br.*) *lácera* *Mich.* A fine species, with yellowish-green flowers. Cultivated with *Cypripèdium ventricòsum.* Vide *Gard. Mag., vol. vi. p. 510.*

Amaryllídeæ. *Alstrœmèria acutifòlia* *Link et Otto.*

Asphodèlææ. *Allium* (*L.*) *lineàre* *L., A. euósmon* *Link et Otto, Loud. Hort. Brit. Sup. p. 476.*

Fílices. *Trib. 2. Osmundàææ.* *Aneímia* (*Swz.*) *fraxinifòlia* *Radd., A. collina* *Radd. — Alpha. Sept. 8. 1830.*

August 30, and 31. — We are happy to find it is the intention of Messrs. Young to form an arboretum, with the same extraordinary exertion that they have bestowed on their herbaceous collection; and most ardently do we desire that their efforts may be attended with the same success. We know of no nurserymen who can do it so well; because we know of no nursery where there is a foreman so truly scientific, and so very enthusiastic and industrious, as Mr. Penny. We hope we shall not spoil that young man, by saying all that we think of him. We hope he will continue to labour hard both in body and mind, and to keep his heart for many years on his very extensive (for an individual so circumstanced) botanical library. At 45 he may relax a little. We have now Mr. Donald, Mr. Buchanan, and Messrs. Young following the example set by Messrs. Loddiges. We shall surely have something as a result; and we trust that, in connection with our plans to be given in *Illustrations of Landscape-Gardening* (Part I. of which appears with the present Number), it will be the diffusion of rare trees and shrubs everywhere — every shrubbery in short an arboretum. — *Cond.*

Tooting Nursery. Aug. 29. — The collection of heaths here, of which in an early Number we gave a copious list, is yearly increasing. Above a dozen of new species and varieties were raised last year from seeds received from the Cape of Good Hope; and some of them have already come into flower. The collection of American trees and shrubs is also receiving additions, especially in that most beautiful genus *Azàlea*. The home nursery, enclosed within high walls, is being gradually converted into a choice flower garden; and the fruit trees on the walls made to give place to the more rare and beautiful trees, shrubs, and roses. *Fúchsia cónica, thymifòlia*, and other species, and *Magnòlia fuscàta*, have stood the winter against these walls without any covering; dying down to the ground, and springing up again vigorously in spring, so as now to be between 3 and 4 ft. high. That noble plant *Hòvea Célsi* has here been propagated with extraordinary success, and we saw upwards of 1000 seedlings. This plant ought to be in every green-house and conservatory, and tried against every warm wall. As usual here, every thing is in excellent order. We were much pleased to see that the Miss Rollisons, highly accomplished young ladies, have gardens which they form, plant, and cultivate themselves. These ladies draw flowers most beautifully and scientifically; and we have recommended to them the drawing on stone and publication of the different heaths raised for the first time by their father and brothers. To see Miss Ronalds, the daughter of one nurseryman, preparing a work on apples, and those of another preparing a work on heaths, is a gratifying proof of the progress of the age. The young nurseryman who would not desire to possess the Brentford collection of apples, and the select Tooting heaths, must be a heartless son of Adam indeed. — *Cond.*

ART. VIII. Covent Garden Market.

The Cabbage Tribe		From			To			Stalks and Fruits for Tarts, Pickling, &c.		From			To		
		£	s.	d.	£	s.	d.			£	s.	d.	£	s.	d.
Cabbages, per dozen.															
White		0	0	6	0	0	10	Angelica Stalks, per pound		0	0	4	0	0	0
Red		0	2	0	0	3	0	Sea Samphire, p. small pan.		0	0	6	0	0	0
Plants, or Coleworts		0	1	0	0	2	0	Vegetable Marrow, per doz.		0	1	6	0	0	0
Savoy, per dozen		0	1	0	0	1	6	Tomatoes, per punnet		0	0	9	0	1	3
Cauliflowers, per dozen		0	2	0	0	3	0	Capsicums, per hun.		0	4	0	0	0	0
Broccoli, Cape, per bunch		0	0	8	0	1	6	Edible Fungi and Fues.							
Legumes.															
Peas { per half sieve		0	1	6	0	2	6	Mushrooms, per pottle		0	1	6	0	0	0
{ per sieve		0	3	0	0	5	0	Morels, per pound		0	12	0	0	0	0
Beans, per sieve		0	2	0	0	2	6	Dried Truffles, per pound.							
Windoor { per sieve		0	2	6	0	3	6	English		0	14	0	0	0	0
{ per sack		0	5	0	0	8	0	Foreign		0	14	0	0	0	0
Kidneybeans, per half sieve		0	1	6	0	2	6	Fruits.							
Scarlet runners		0	1	0	0	1	6	Apples, Dessert, per bushel:							
Tubers and Roots.															
Potatoes { per ton		2	10	0	4	0	0	Nonsuch		0	6	0	0	7	0
{ per cwt.		0	2	6	0	4	0	King of Pippins		0	10	0	0	12	0
{ per bush.		0	1	6	0	2	6	Downton Pippin		0	12	0	0	14	0
Kidney, per half sieve		0	1	3	0	1	6	Kerry Pippin		0	10	0	0	12	0
Turnips, White, per bunch		0	0	2	0	0	3	Baking, per bushel		0	4	0	0	6	0
Carrots, per bunch		0	0	4	0	0	8	Jersey		0	3	0	0	5	0
Red Beet, per dozen		0	1	6	0	2	6	Pears, Dessert, Summer Ber-							
Horseradish, per bundle		0	3	6	0	8	0	gamot, per half sieve		0	3	0	0	5	0
Radishes								Jargonelles		0	7	0	0	10	0
Red, per dozen hands (24		0	0	9	0	1	0	Williams's Summer Bonnet							
to 30 each)		0	0	9	0	1	0	Chrétienne		0	5	0	0	10	0
White Turnip, per bunch		0	1	6	0	2	0	Knevett's Seedling		0	6	0	0	7	0
The Spinach Tribe.															
Spinach, per sieve		0	1	6	0	2	0	Gansell's Bergamot		0	21	0	0	0	0
Sorrel, per half sieve		0	1	0	0	0	0	Peaches, per dozen		0	1	0	0	6	0
Patience Duck, per ½ sieve		0	3	0	0	0	0	Nectarines, per dozen		0	1	0	0	6	0
The Onion Tribe.															
Onions								Apricots, per dozen		0	2	0	0	5	0
Old, per bushel		0	6	0	0	6	0	Plums, Dessert { per ½ sieve		0	5	0	0	7	0
For Pickling, per ½ sieve		0	2	6	0	5	0	{ per punnet		0	1	0	0	1	3
Leeks, per dozen bunches		0	2	0	0	0	0	Orleans, per half sieve		0	2	6	0	3	6
Garlic, per pound		0	0	8	0	0	10	Green Gages		0	3	0	0	5	0
Shallots, per pound		0	1	0	0	0	0	Baking, per half sieve		0	2	0	0	2	6
Asparagus Plants,															
Salads, &c.															
Artichokes, per dozen		0	2	0	0	3	0	Danmons		0	1	6	0	2	6
Lettuce, Cos, per score		0	0	6	0	1	0	Mulberries, per gal. (2 pot.)		0	1	0	0	0	0
Endive, per score		0	0	9	0	1	6	Barberries, per half sieve		0	5	0	0	0	0
Celery, per bundle (12 to 15)		0	1	0	0	1	6	Elderberries, per bushel		0	2	6	0	4	0
Small Salads, per punnet		0	0	2	0	0	3	Gooseberries, per half sieve		0	2	0	0	3	0
Watercress, per dozen small		0	0	4	0	0	6	Currants, Black, per ½ sieve		0	5	0	0	10	0
bunches		0	0	4	0	0	6	White		0	3	6	0	5	0
Burnet, per bunch		0	0	3	0	0	0	Red, for Wine		0	4	0	0	6	0
Pot and Sweet Herbs.															
Parsley, per half sieve		0	1	6	0	0	0	For tarts		0	2	6	0	3	6
Tarragon, per doz bunches		0	3	0	0	0	0	Dessert		0	4	0	0	5	0
Parslain, per punnet		0	0	6	0	0	0	Raspberries, Red, per gal							
Fennel, per dozen bunches		0	3	0	0	0	0	(2 pottles)		0	0	8	0	1	3
Thyme, per dozen bunches		0	2	0	0	2	6	Strawberries, per gallon (2							
Sage, per dozen bunches		0	2	0	0	0	0	pottles) about 3 plants		0	1	0	0	2	6
Mint, per dozen bunches		0	2	0	0	0	0	Walnuts, per bushel		0	6	0	0	9	0
Peppermint, per doz. bunch		0	2	0	0	0	0	Filberts, per 100 lbs.		0	30	0	0	50	0
Marjoram, per doz. bunches		0	1	6	0	0	0	Pine-apples, per pound		0	5	0	0	9	0
Savory, per dozen bunches		0	3	0	0	0	0	Hot-house Grapes, p. pound		0	2	0	0	3	6
Basil, per dozen bunches		0	6	0	0	0	0	Figs, per dozen		0	1	0	0	2	6
Rosemary, per doz. bunches		0	4	0	0	0	0	Melons, per pound		0	1	0	0	1	6
Lavender, per doz. bunches		0	3	0	0	0	0	Cucumbers, Frame, p. brace		0	1	0	0	1	6
Tansy, per dozen bunches		0	1	0	0	0	0	{ per hundred		0	1	6	0	2	0
								Pickling, { per thousand		0	12	0	0	18	0
										0	1	0	0	3	0
								Oranges { per dozen		0	10	0	0	16	0
								{ per hundred		0	1	0	0	2	6
								Lemons { per dozen		0	8	0	0	14	0
								{ per hundred		0	12	0	0	16	0
								Brasil Nuts, per bushel		0	12	0	0	16	0
								Spanish Nuts, per pack		0	4	0	0	0	0
								Barcelona		0	5	0	0	0	0
								French Almonds		0	6	0	0	0	0

Observations. — Our supplies of fruit have been rather plentiful, especially plums, green gages, and damsons; pears of the summer varieties in good supply; apples, although not a general crop, are in some places good, and come to hand large and fine; filberts are of excellent quality, and plentiful.

— Sept. 14. 1830.

Our supplies at market have been generally good; and the fruits, consi-

dering the changeableness of the weather, fine as to appearance, but deficient in flavour from the want of sun and warmth. Wall fruits, such as peaches, nectarines, &c. &c., have been plentiful and extremely cheap, but by no means fine in quality and flavour. The supply of grapes from the vineries has been very abundant; the prices, consequently, low, even to 1s. per lb. for inferior quality. Pine-apples have been deficient in supply compared to other seasons, but quite equal to the demand for them, since the breaking up of parliament and the absence of the king, and, consequently, of the nobility and official personages, at this season. Filberts have been very plentiful; and from having been sent in large quantities early in the season, in an unripe state, have realised very low prices: at present they are in much better condition for packing, and command a higher price. Vegetables generally have been furnished in large quantities and at rather low prices, with few exceptions, such as gherkins and small onions for pickling, which, from the prevalence of wet, and the necessary consequence, in our climate, of cold, and in some instances frosty, nights, have been short in quantity and in demand.

Upon the whole, the season, I fear, cannot be considered favourable to the horticulturists, who have been suffering, for many years past, under the continuous depression of prices: in evidence of which, I offer you the following comparative state of proceeds of the produce of 14 acres of land, within four miles of London, under what may be considered a fair system of culture. In the mean time, very little difference has taken place in the necessary outlay, especially in the rent, tithes, and taxes; the price of labour, one of the most important features of expense, is the same; the cost of manure, horse-keeping, &c., has been somewhat reduced.

Receipts of the Produce of 14 Acres of Garden Land, from the Year 1815 to 1830.

Total produce.				Average per acre, excluding fractions.				Total produce.				Average per acre, excluding fractions.			
£	s.	d.		£	s.	d.		£	s.	d.		£	s.	d.	
1816 - 838	3	11	About	59	17	5		1823 - 730	16	11½	About	52	4	0	
1817 - 859	16	3	-	61	8	0		1824 - 779	6	8½	-	55	13	4	
1818 - 900	13	3½	-	64	6	7½		1825 - 922	0	6½	-	65	11	5	
1819 - 722	7	4	-	51	12	4½		1826 - 744	15	0½	-	53	2	6	
1820 - 787	10	2	-	56	5	0		1827 - 589	10	7	-	42	5	0½	
1821 - 786	12	10	-	56	4	0		1828 - 525	15	2	-	38	11	1	
1822 - 667	6	8	-	47	13	4		1829 - 475	6	0	-	33	19	0	

From these data you will observe, the highest rate of proceeds was in 1825, during the period of the speculative mania which forced up artificially every article of produce; the lowest of depression, in 1829, considered as the result of the change in the monetary circulation from paper to gold; and I am sorry to add, that the proceeds of 1830, as far as made up, are lower than to the corresponding period in the preceding year. — G. C. Sept. 20.

ART. IX. *Provincial Horticultural Societies.*

NAME of Secretary not before given : — Wallingford Ranunculus Show, W. Greenwood.

CAMBRIDGESHIRE.

Cambridgeshire Horticultural Society. — July 22. The judges awarded as follows : —

Flowers. Carnations (five bloom) : 1. Perfection, Bellerophon, Fletcher's Devonshire, Doctor Barnes, Gregory's Alfred, Mr. Robert Nutter; 2. Wilde's Perfection, Madame Mara, Turner's Princess Charlotte, Pollitt's Triomphe Royal, Cartwright's Rainbow, Mr. John Bailey. Of any sort, Alfred, Mr. John Bailey. Seedling, Mr. Gimson. Picotees (six best bloom, one of a sort) : 1. Martin's Linnæus, Bunting's Miss Neville, Countess of Sandwich, Lee's Cleopatra, Lee's Cranfield Beauty, Wood's Deademona, Mr. Twitchett; 2. Countess of Sandwich, Martin's Linnæus, Black Prince, Queen Caroline, two unknown, Mr. John Bailey. Of any sort, Hood's Triumphant, Mrs. Lascelles. Seedling, Mr. John Bailey. Hollyhock, Mr. Catling. Balsam : No first prize.

variety; *Verbena Melindres*; and *Lychnis fulgens*. Forty specimens of pinks, amongst which Barratt's Conqueror, Westlake's Hero, Woollard's Blush, and Bowes's Lustre were much admired. Twelve specimens of double georgina flowers, and a splendid general bouquet. There were many fine dishes of Caroline, Hautbois, Wilmot's Superb, and Chile strawberries; cherries, raspberries, gooseberries, and currants; with some large cauliflowers, horseradish, turnips, potatoes, and Windsor beans. (*Norfolk Chronicle*, July 10.)

Norwich Horticultural Society. — Aug. 4. Prizes were awarded as follows: —

Plants. *Oenothera Lindleyana*, Mrs. Mackie. *Humea elegans*, Rev. G. Leathe. *Nerium splendens*, G. Jennings, gardener to Mrs. Ives. *Hydrangea quercifolia*, Mrs. Gurdon. Collection of Hollyhocks: 1. Edward Lombe, Esq.; 2. Mr. Noverre. — *Flowers.* Carnations (best half-dozen), Captain Custance. Carnations and Picotees: 1. T. Bacon (cottager); 2. J. Howlett (florist); 3. Wm. Craske (florist). In pots: 1. Mr. Wilson; 2. Mrs. Burroughes. Seedling Carnations and Picotees, Lieut.-Colonel Mason. Georgina, Mr. John Smith. Best half-dozen, Mrs. Mackie. Balsams in pots, W. Randall (florist). — *Fruit.* Pine: 1. Black Jamaica, Mr. D. Stewart; 2. Queen, Mr. Whiting, gardener to Lord Stafford. Grapes: 1. Black Hamburg, R. Crawshaw, Esq.; 2. Black Prince, R. Hawkes, Esq. Peaches, Noblesse, Mr. D. Stewart. Nectarines, Red Roman, Mr. D. Stewart. Apricots: 1. Algerine, Mr. Hart; 2. Anson, T. Basey (cottager). Apples, Hawthornden, P. Wilson (cottager). Cherries, Morello, J. Nurse (cottager). Melon: 1. Orange Cantaloup, T. S. Norgate, Esq.; 2. Polignac, Rev. T. S. Buckle. Gooseberries, Crown Bob, Mrs. Gurdon. Twelve heaviest, mixed, Mr. Noverre. — *Culinary Vegetables.* Peas, Green Marrow, Wm. Everitt, Esq. Lettuce, Bath Cos, the Dean of Hereford.

Mr. G. Thurtell had an exhibition of 350 blooms, and two dozen pots of carnations and yellow and English picotees. Some of the gooseberries weighed no less than 1½ oz. There was also a specimen of a cockscomb, measuring 15 in. across. (*Norwich Mercury*, Aug. 7.)

BERKSHIRE

Wallingford Ranunculus Show. — June 8. Several gentlemen of the town and neighbourhood sent some splendid specimens of green-house plants to decorate the hall, which were viewed with delight, by a large number of ladies and gentlemen, for three successive days. The ranunculuses were shown in classes, and the prizes were awarded as follows: —

Class 1. Dark and Dark Purple: 1. Seedling, Rev. Jos. Tyso; 2. Naxara, Mr. Woodbridge; 3. Naxara, Mr. Costar. Class 2. Striped: 1. Téméraire, Mr. Costar; 2. Mélange, Rev. Jos. Tyso; 3. Mélange, Mr. Turner. Class 3. Crimson Red and Rose: 1. Apollo, Rev. Jos. Tyso; 2. Gunn's Crimson, Mr. Woodbridge; 3. Henrietta, Mr. Turner. Class 4. Edged: 1. Doctor Franklin, Mr. Turner; 2. Rose Incomparable, Mr. Costar; 3. Sophia, Mr. Greenwood. Class 5. Spotted: 1. Agamemnon, Mr. Clarke; 2. Arbrisseau, Mr. Woodbridge; 3. Arbrisseau, Mr. Turner. Class 6. Orange, Yellow, and Straw: 1. Eliza, and 2. Cedo Nulli, Rev. Jos. Tyso; 3. Eliza, Mr. Costar. Class 7. Mottled: 1. Pucelle, Mr. Birkett; 2. Earl of Coventry, and 3. Cora, Mr. Clarke. Stands of nine Flowers: 1. Mr. Turner; 2. Mr. Clarke; 3. Rev. Jos. Tyso; 4. Mr. Greenwood; 5. Mr. Costar; 6. Mr. Woodbridge; 7. Mr. Birkett.

Premium prize for the best flower shown that day, Rev. Jos. Tyso: a very fine dark crimson, raised by him this year. Mr. John Ronalds of Brentford and Mr. Biddall of Finchfield were the umpires; and they, as well as every florist present, pronounced it the best dark flower they had ever seen. Every one was anxious to possess it; and, as the owner consented to its sale, Mr. Brown of Slough, who was present, purchased it for five guineas, and named it "Othello." There were several other seedlings of great merit exhibited; and we are happy to be informed that the rev. gentleman who has been so successful in raising seedling ranunculuses will shortly communicate his method through the medium of the public press. — *W. Greenwood, Secretary.*

GLOUCESTERSHIRE

Gloucester Horticultural Society. — June 18. There were about 1200 specimens ticketed, and prizes were awarded as follows: —

Plants. Stove or Green-house: 1. *Cactus speciosissima*, Mr. J. C. Wheeler; 2. *Cactus speciosus*, R. Canning, Esq.; 3. *Hoya carnosa*, Mrs. Matthews; 4. *Combrètum elegans*, Mr. J. C. Wheeler; 5. *Alstroemeria Pelagrina*, — Shewell, Esq. Heath: 1. *Erica ventricosa superba*, Mr. J. C. Wheeler; 2. *Ventricosa incarnata*, R. Canning, Esq.; 3. *Carnea*, Mr. J. C. Wheeler; 4. *Hybrida*, R. Canning, Esq.; 5. *Perspicua*, Mr. J. C. Wheeler. Hardy: 1. *Kalmia latifolia*, Mr. J. C. Wheeler; 2. *Pæonia albiflora*, Mr. Holbert; 3. *Delphinium intermedium*, Miss Walters; 4. *Fraxinella rubra*, Miss Cother; 5. *Rhododendron maximum*, Mr. J. C. Wheeler. — *Flowers.* Ranunculuses. Dark: 1. Mr. J. C. Wheeler; 2. R. Canning, Esq.; 3. Mr. J. C. Wheeler; 4. Mr. Grafton; 5. Mr. J. C. Wheeler. Light: 1. Mr. T. Reynolds; 2. Mr. Crump; 3. Mr. T. Reynolds; 4. and 5. Mr. Crump. Pinks. Black and White: 1. Mrs. Jas. Reynolds; 2. Mr. J. D. Wheeler; 3. Mr. George Bubb; 4. and 5. Mr. Hitch. Purple-laced: 1. Mr. J. D. Wheeler; 2. Mr. Jordan; 3. Mrs. Matthews; 4. Mr. Pigott; 5. Mr. G. Bubb. Red-laced: 1. Mrs. Jas. Reynolds; 2. Mr. G. Bubb; 3. Mr. Jordan; 4. Mr. J. C. Wheeler; 5. Mr. Jordan. Selfs and Fancies: 1. Mr. Hitch; 2. Mrs. Matthews; 3. D. Pennant, Esq.; 4. Mr. Hitch; 5. Mr. Jordan. Roses. Dark: 1. and 2. Mrs. Jas. Reynolds; 3. and 4. C. O. Cambridge, Esq.; 5. Mrs. Dowdeswell. Light: 1. Mr. J. C. Wheeler; 2. D. M'Lean, Esq.; 3. D. Pennant, Esq.; 4. Mr. J. C. Wheeler; 5. C. O. Cambridge, Esq. Bouquet, Mr. J. D. Wheeler. — *Fruit.* Cherries: 1. May Duke, R. S. Davies, Esq.; 2. May Duke, W. Wood, Esq.; 3. Early Heart, D. M'Lean, Esq.; 4. May Duke, Mr. Wilkins; 5. May Duke, Mr. Holbert. Strawberries: 1. Keen's Seedling, Joseph Bennett, Esq.; 2. Pine, Mr. J. C. Wheeler; 3. Roseberry, Mrs. Dowdeswell; 4. — Shewell, Esq.; 5. Alpine, Mrs. Dowdeswell. — *Culinary Vegetables.* Cauliflowers: 1. — Shewell, Esq.; 2. D. M'Lean, Esq.; 3. Mr. Holbert; 4. Miss Cother; 5. Mrs. J. Reynolds. (*Gloucester Journal*, June 19.)

WORCESTERSHIRE

Worcester Horticultural Society. — June 17. The award of prizes was as follows: —

Plants. Stove and Green-house: 1. *Cactus speciosissima*, Mr. Linton; 2. *Gloxinia speciosa*, Mr. Bradley; 3. *Gladolus cardinalis*, Mr. Smith; 4. *Fuchsia gracilis*, Mr. Mowbray. Hardy: 1. *Kalmia latifolia*, Mr. Tapp; 2. *Verbena Melindres*, Mr. Smith. Heaths: 1. *Erica ventricosa stellata*, Mr. Tapp; 2. *Erica florida*, Mr. Smith. — *Flowers.* Ranunculuses. Dark and Dark Purple: 1. Mr. Smith; 2. Mr. Pennethorn; 3. Mr. Tapp. White Ground, striped, spotted, and

edged: 1. Rev. T. Waters; 2. Mr. Gummery; 3. Mr. Smith. Yellow Ground, striped, spotted, and edged: 1. and 2. Mr. Pennethorn; 3. Mr. Tapp. Orange and Yellow: 1. Mr. Gummery; 2. Rev. T. Waters; 3. Mr. Gummery. Scarlet and Crimson: 1. Rev. T. Waters; 2. Mr. Smith; 3. Mr. Pennethorn. Light: 1. Rev. T. Waters; 2. Mr. Tapp; 3. Mr. Smith. Pinks. Purple-laced: 1. Mr. Fuller; 2. Rev. T. Housman. Red-laced: 1. J. Taylor, Esq.; 2. Mr. Smith; 3. Rev. T. Housman. Plain: 1. Mr. Hickman; 2. J. Taylor, Esq. Roses: 1. R. Berkeley, Esq.; 2. and 3. Mr. Beach; 4. Mr. Fuller; 5. Mr. Beach; 6. J. Taylor, Esq.; 7. Mr. Tapp; 8. J. Taylor, Esq. — *Fruit*. Pine, Black Jamaica, Mr. Wood. Melon, Stanhope's Early, R. Nuttall, Esq. Peaches, Red Magdalen (forced), Mr. Beddard. Grapes: 1. Black Hamburgh, Mr. Kirby; 2. White Muscadine, Mr. Wood. Cherries: 1. May Duke, R. Allies, Esq.; 2. May Duke, R. Berkeley, Esq. Strawberries: 1. (one pint, heaviest) Keen's Seedling, Mr. Mowbray; 2. (one pint, best flavoured) Mr. Walker. — *Culinary Vegetables*. Cauliflowers, Mrs. Farley. Peas, double-blossomed, Mr. Mowbray. Beans, Broad, R. Berkeley, Esq.

Extra-Prizes. Grapes: 1. White Hamburgh, and 2. White Muscadine, Rev. T. Hardward. Strawberries, Sir H. Wakeman, Bart. Cauliflowers, Sir A. Lechmere, Bart. Lettuce, R. Allies, Esq. Onions, Lisbon, R. Allies, Esq. Turnips, Mr. Smith. Coreopsis tinctoria, and Cockcomb, Sir H. Wakeman, Bart.

The beautiful varieties of the rose, from the extensive collection of Earl Beauchamp, are entitled to especial attention; and a *Cactus speciosissimus*, in brilliant bloom, was justly admired. Amongst the hardy shrubs were several of the *Kalmia latifolia*, equalled by few of its tribe. In one dish of strawberries were 22 of Keen's Seedling, weighing 12 oz. (*Worcester Herald*, June 26.)

July 20. The display of fruits was abundant. A dish of the new Scarlet Elton strawberries (first introduced by T. A. Knight, Esq., of Downton Castle, Herefordshire), grown by Mrs. Farley's gardener, were in high perfection. Among the vegetables were five beautiful cucumbers, from the garden of Sir A. Lechmere, Bart., all grown on one plant. A *Cactus speciosissimus*, from the garden of Mr. Mann, merits notice on account of being the fourth time of blossoming this year. Prizes were awarded as follows:—

Plants. Stove or Green-house: 1. *Nerium splendens*, J. Taylor, Esq.; 2. *Verbena chamædrysoides*, Mr. Smith; 3. *Calceolaria corymbosa*, Sir H. Wakeman; 4. *Lachnæa conglomerata*, Mr. Tapp. Heaths: 1. *Ventricosa superba*, Mr. Smith; 2. *Erica Bowiciana*, Mr. Tapp. Hardy Annuals: 1. *Schizanthus pinnatus*, R. Berkeley, Esq.; 2. *Clarkia pulchella*, Mr. Smith. — *Flowers*. Carnations. Bizarres. Scarlet: 1. William the Conqueror, Mr. Gummery; 2. Lord Hill, and 3. Strensham Hero, J. Taylor, Esq. Crimson: 1. Paul Pry, Mr. Holmes; 2. Cartwright's Rainbow, Mr. Smith. Flakes. Scarlet: 1. Lady Lennox, Mr. Holmes; 2. Neal's George the Fourth, J. Taylor, Esq.; 3. Seedling, Mr. Holmes. Purple: 1. Timmis's Lord Byron, Sir A. Lechmere; 2. Turner's Princess Charlotte, J. Taylor, Esq.; 3. Hall's Major Cartwright, Rev. T. Housman. Rose: 1. Neal's Miss Paton, Mr. Smith; 2. Plant's Lady Wood, Rev. T. Housman; 3. Aurelia, J. Taylor, Esq. Picotees. Red: 1. Princess Victoria, Mr. Holmes; 2. Seedling, J. Taylor, Esq.; 3. Seedling, R. Berkeley, Esq. Purple: 1. Cleopatra, J. Taylor, Esq.; 2. Martin's Linnæus, Rev. T. Housman; 3. Fair Flora, Sir A. Lechmere. Balsams: 1. and 2. R. Berkeley, Esq. — *Fruit*. Gooseberries, 12 heaviest berries: 1. Huntsman (14 of these berries weighed 1 lb.), J. Taylor, Esq.; 2. Red, Roaring Lion, and 3. Green, Ocean, Mr. Fuller; 4. Yellow, Royal Gunner, R. Nuttall, Esq.; 5. White, Cheshire Lass, J. Taylor, Esq. Currants: 1. Red, and 2. White, Sir T. Winnington, Bart. Raspberries, Antwerp, Mr. Linton. Grapes: Black, Black Prince, J. Taylor, Esq.; White, White Muscat, Mr. Wood. Pine, Enville, A. Skey, Esq. Melon, London Rock, Mr. R. Allies. Peaches, French Mignonne, Sir H. Wakeman. Nectarines, Red Roman, Sir H. Wakeman. Apples, early dessert, White Costin, Rev. T. Walters. Plums, early dessert, Blue Gage, Mr. Linton. — *Culinary Vegetables*. Cucumbers, from ridge, Sir H. Wakeman.

Extra-Prizes. Cherries, Morello, Mr. Wood. Strawberries, New Scarlet, Elton, Mrs. Farley. Onions, Potato, Mr. R. Allies. Celery: 1. White, and 2. Red, Sir H. Wakeman. Shaddocks, Mr. Smith. (*Ibid.*, July 24.)

Vale of Evesham Horticultural Society. — June 17. The following prizes were awarded:—

Plants. Stove or Green-house: 1. *Cactus speciosissimus*, and 2. *Stapelia grandiflora*, Edward Rudge, Esq.; 3. *Rivina lævis*, Mr. Jessop. Hardy Annuals: 1. Rev. Mr. Shute; 2. Mr. Payne. — *Flowers*. Ranunculuses. Dark Purple: 1. Hortensis, Mr. Bannister of Shipston; 2. Mrs. Eyston. Scarlet, Mr. William Murrell. Crimson: 1. and 2. Edward Rudge, Esq. Shaded: 1. Mr. Bannister of Shipston; 2. Mrs. Eyston; 3. Mr. Shayler. Yellow Ground, striped: 1. Mrs. Eyston; 2. Mr. Fulton. White Ground, striped: 1. and 2. Mr. Mayfield. Orange: 1. and 2. Mrs. Eyston. Sulphur: 1. Mr. Felton; 2. Mrs. Eyston. White: 1. and 2. Mrs. Mayfield. Pinks. Purple-laced: 1. Barratt's Conqueror, and 2. Mrs. Hunt; 3. Davey's Lord Hill, Mr. Jessop. Red-laced: 1. Duchess of Oldenburgh, Mrs. Eyston; 2. and 3. Mrs. Hunt. Stars: 1. Lady Mostyn, Mrs. Hunt; 2. Mr. Goodall; 3. Mr. Fulton. Roses: 1. Tuscany, Mrs. Hunt; 2. Sultan, Mr. Jessop; 3. Mr. Izod; 4. Miss Day; 5. Mrs. Hunt; 6. Pluto, Mr. Jessop; 7. Mrs. Hunt; 8. Rev. G. Shute. — *Fruit*. Melons: Morocco Melon, Edward Rudge, Esq. Strawberries: 1. Keen's Seedling, Mrs. Charles; 2. Black Taunton, Mrs. Hunt; 3. Mrs. Eyston. Best-flavoured: 1. Mrs. Charles; 2. Black Taunton, Mr. Hunt; 3. Keen's Seedling, Mrs. Eyston. Cherries: 1. Black, Mrs. Charles; 2. May Duke, Mr. Goodall. — *Culinary Vegetables*. Cauliflowers, Edward Rudge, Esq.

Extra-Prizes. Grapes, Black Hamburgh, Mr. Fulton. Queen Pine, Mr. Fulton. Apples: 1. Mr. Fulton; 2. Mrs. East.

The president exhibited a sample of dried Russian peas, which had been consigned, during the last winter, to a seedsman in Jermyn Street, London, on trial for approval, and which are found to be a very good substitute for green peas during the winter months. (*Worcester Journal*, June 26.)

MONMOUTHSHIRE

Glamorgan and Monmouthshire Horticultural Society. — June 16. Chairman, H. Moggridge, Esq., V. P. of the Society. Judges of the Show, Mr. Moggridge, Mr. Deacon, Mr. Matthews, Mr. P. Potter, and (we believe, for we did not catch his name) the gardener of C. H. Leigh, Esq., of Pontypool Park. Amongst the prizes announced, the greatest in number was, as might be expected, adjudged to Sir Chas. Morgan and Mr. Leigh; several were given to Mr. Booth Grey, Mr. Prothero, Mr. John Moggridge, Mr. E. P. Richards, Mr. Richard Hill, Mr. Jenner of Wenvoe Castle, and Mr. Reece, honorary secretary; and amongst those who took extra-prizes we noticed the names of Mr. Moggridge, Mr. Jenkins of Lanharran, and Miss Leyson. The compe-

titution amongst the cottagers, it was regretted, was not so great as usual, a great majority of the offered prizes not being claimed. The only prizes awarded to cottagers on the hills of the two counties were extra-prizes given to two labourers in Blackwood village. (*The Cambrian*, June 15.)

HEREFORDSHIRE.

Hereford Horticultural Society. — June 22. The prize-stand contained a beautiful and extensive variety of roses, most of them the choicest sorts, pinks in great perfection, the finest kinds, and ranunculuses also of great excellence, with several noble hot and green-house plants. The large stand was tastefully decorated with a magnificent collection of pelargoniums, stove, and green-house plants; and the stage appropriated to fruits and vegetables contained remarkably fine pines, melons, grapes, strawberries in great variety and excellence, cherries, apples, cauliflowers, carrots, cabbages, turnips, lettuces, &c. Amongst the strawberries was a seedling from Sir J. G. Cotterell, Bart., Garnons, of excellent flavour; a variety of white beet, also from Garnons, was on the stand, which is highly spoken of as an esculent. The show afforded the utmost satisfaction to the large company that attended; and the arrangements were highly creditable to Mr. Godsall, the secretary. (*Hereford Journal*, June 23.)

July 24. A specimen of a new esculent vegetable, called "panace," for the introduction of which the silver medal was given by the Society of Arts, was exhibited, and attracted particular attention: the roots taken up in December and January are from 6 to 10 inches long, and, when boiled, are similar to asparagus in flavour. On the small stand was placed a medal (with those we noticed at the last exhibition), presented by the London Horticultural Society to Mr. Gardner, Sir J. G. Cotterell's gardener. The prizes were awarded as follows:—

Plants. Stove: *Cactus speciosissimus*, C. G. Cooke, Esq. Green-house: 1. *Fuchsia gracilis*, C. G. Cooke, Esq.; 2. *Calceolaria rugosa*, Sir J. G. Cotterell. Hardy: 1. Double Yellow China Rose, T. H. Symons, Esq.; 2. *Verbena Melandres*, Mr. Godsall. — *Flowers.* Carnations, Scarlet Bizard: 1. Ives's Prince Leopold, Mr. Godsall; 2. Lord Hill, Mr. Nott. Flakes, Scarlet: 1. Turner's Jupiter, Mrs. W. Pateshall; 2. Madame Mara, R. J. Powell, Esq.; 3. Pearson's Madame Mara, Mr. Godsall. Rose: 1. Lady Clinton, and 2. Lady of the Lake, R. J. Powell, Esq. 3. Ives's Ensign, Mr. Godsall. Purple: 1. Turner's Princess Charlotte, Mr. Godsall; 2. Smith's Fair Ellen, Mrs. W. Pateshall. Picotees, Purple: 1. Hufton's Miss Emma, R. J. Powell, Esq.; 2. Hufton's Isabella, Mrs. W. Pateshall; 3. Green's Cupid, Mr. Godsall. Red: 1. Perkin's Mayor of Northampton, 2. Pearson's Chilwell Beauty, and 3. Pike's Defiance, Mrs. W. Pateshall. Georgiana Dark: 1. Mount Vesuvius, Mr. Nott; 2. Miller's Juba, and 3. Diadem, Mrs. W. Pateshall. 4. Black Turban, Mr. Cranston. Light: 1. Dwarf Yellow, Mr. Cranston; 2. Minerva, Mr. Nott. Balsams: 1. and 2. T. H. Symons, Esq. Cockscombs: 1. Sir J. G. Cotterell; 2. Mr. Nott. — *Fruit.* Gooseberries. Red: 1. Crown Bob, Mr. Spencer; 2. Roaring Lion, Mr. Cranston; 3. Cockspur, and 4. Scotch Black, Sir J. G. Cotterell. Green: 1. Sirrel's Green, 2. Green Ocean, and 3. Chevalier Green, Mr. Spencer. Yellow: 1. T. H. Symons, Esq.; 2. Golden Sovereign, and 3. Mr. Godsall. Grapes: 1. Black Prince, Mr. Spencer; 2. American, and 3. Black Hamburgh, Sir J. G. Cotterell. Melons: 1. Golden Cantaloup, Mr. Lee; 2. Netted Cantaloup, T. H. Symons, Esq.; 3. Silver Cantaloup, Mr. Williams. Plums: 1. Orleans, Sir J. G. Cotterell; 2. Blue Gage, R. J. Powell, Esq. Currants: White, T. C. Bridges, Esq.; Red, R. J. Powell, Esq. — *Culinary Vegetables.* Celery: 1. S. Cam, Esq.; 2. R. J. Powell, Esq. (*Ibid.*, July 28.)

Ross Horticultural Society. — June 16. Amongst the house productions, Mrs. Smallwood's gardener produced a *Cactus speciosissimus*, in flower and fruit, which took the first prize; and Mr. J. C. Wheeler showed another specimen of this splendid plant in extraordinary fine flower. Mr. Reynolds furnished some of his *infant* cockscombs, which will be of age by the next show. *Pæonia edulis Whittlèji*, from the garden of the Rev. Love Robertson, was as fine a specimen as ever was bloomed, in quantity of truss and colour; and the second prize in colour was never surpassed. The number of specimens ticketed and entered into the Society's books amounted to 1164; and the evening's sale of unremoved fruits and vegetables produced 14 7s. 7d. Prizes were awarded as under:—

Plants. Stove or Green-house: 1. *Cactus speciosissimus*, Mrs. Smallwood; 2. *Erythrina Crista galli*, Mrs. Westfaling; 3. *Hoya caribæa*, John Cooke, Esq.; 4. *Amaryllis vittata*, Mr. J. C. Wheeler; 5. *Gloxinia maculata*, Mrs. Westfaling. Heaths: 1. *Ventricosa carnea*, Mr. J. C. Wheeler; 2. *Ventricosa coccinea*, John Cooke, Esq.; 3. *Ventricosa superba*, Mrs. Westfaling. 4. *Hybida*, Miss Trusted; 5. *Vestita florida*, Mr. J. C. Wheeler. Hardy: 1. *Pæonia edulis Whittlèji*, Mrs. Robertson; 2. *Kalmia latifolia*, and 3. *Rhododendron maximum*, Mr. J. C. Wheeler. 4. *Spiræa Ulmaria*, Edward Pritchard, Esq.; 5. *Silene glutinosa*, Mr. Reynolds. — *Flowers.* Ranunculuses. Dark: 1. Indiana, Mrs. Westfaling; 2. Naxara, Mr. J. C. Wheeler; 3. Roi de Pourpre, and 4. Black Prince, Mrs. Westfaling; 5. Vulcan, Mr. Crump. Light: 1. Angelina, W. Gillman, Esq.; 2. Thesée, Mrs. Westfaling; 3. Painted Lady, Mr. Godsall; 4. Anna Maria, Mrs. Westfaling; 5. Queen of Wurtemberg, Thomas Rudge, Esq. Pinks, Black and White: 1. Westlake's Heroine, W. Gillman, Esq.; 2. Lewis's Defiance, and 3. Flower's Novelty, J. F. Willis, Esq.; 4. Cole's Miss Manby, Mr. Reynolds; 5. Symond's Eclipse, Colonel Money. Purple-laced: 1. Buffalo's Beauty, and 2. Oxonian, John Cooke, Esq.; 3. Law's Hero, K. Evans, Esq. 4. Earl of Uxbridge, Mr. J. D. Wheeler; 5. Looker's Oxonian, K. Evans, Esq. Red-laced: 1. Stephens's Waterloo, and 2. Glory of Newport, John Cooke, Esq.; 3. Taylor's Nonpareil, and 4. Midshipman, J. F. Willis, Esq.; 5. Cooper's Cupid, Charles Biss, Esq. Roses. Dark: 1. Royal Purple, Mr. J. C. Wheeler; 2. Tuscan, Col. Money; 3. Rosa Africana, Mr. Thos. Edwards; 4. L'Ambrée Agréable, Mr. Reynolds; 5. Sanspareil, Mrs. Nourse. Light: 1. Yellow China, Mr. Reynolds; 2. White Moss, Mrs. Nourse; 3. Unique, K. Evans, Esq.; 4. Hybrid de Bengal, Mr. J. C. Wheeler; 5. Celesté, Colonel Money. Best Nosegay, J. F. Willis, Esq. — *Fruit.* Cherries: 1. Rd. Compton, Esq.; 2. Mrs. Platt; 3. and 4. Mrs. Cary Cocks; 5. Mr. Holbert. Strawberries: 1. Keen's Seedling, Mr. Reynolds; 2. Surinam, Mrs. Cary Cocks; 3. Roseberry, 4. Scarlet, and 5. Alpine, Col. Money. — *Culinary Vegetables.* Cauliflowers: 1. John Cooke, Esq.; 2. Mr. Reynolds; 3. Mr. Westfaling; 4. Mr. Holbert; 5. John Cooke, Esq. (*Ibid.*, June 23.)

July 21. The number of specimens ticketed and entered in the Society's books amounted to 633; and the evening's sale of unremoved specimens of fruits produced 32 11s. Prizes were awarded as follows:—

Plants. Stove or Green-house: 1. Mr. J. C. Wheeler; 2. Rev. T. Underwood; 3. J. Cooke, Esq.; 4. Miss Trusted; 5. Messrs. Breeze and Reynolds. Hardy: 1. Mr. Reynolds; 2. J. Cooke, Esq.; 3. W. Gillman, Esq.; 4. and 5. Mr. Reynolds. Heaths: 1. Mrs. Platt; 2, 3, and 4. Miss Trusted; 5. Mr. J. C. Wheeler. — *Flowers.* Carnations. Bizard. Scarlet: 1. Messrs. Breeze and

Flowers. Society's Premium, Vulcan, Mr. Wm. Burman. B. Haworth (of Rowiston), Esq.'s Premium, Benjamin, Mr. Bell. Ranunculuses. Dark : 1. Vulcan, Mr. Bell ; 2. Naxara, Mr. Beecroft ; 3. Thomasina, Mr. Robert Oglesby ; 4. Naxara, Mr. Burman. Light Purple, Grey, and Ash : 1. Shakspeare, Mr. Allinson ; 2. Venus, Mr. Deighton ; 3. Nocturnus, and 4. Brillante, Mr. Heward. Scarlet, Crimson, and Pink : 1. Mercurius, Mr. Percy ; 2. Crimson Brillante, Mr. T. Lambert, gardener to Mr. Casson ; 3. Adonis, Mr. Allinson ; 4. Rosney, Mr. Heward. Orange, Yellow, and Buff : 1. Juliana, Mr. Burman ; 2. Urelia, and 3. Golconda, Mr. Beecroft ; 4. Saint James, Mr. Robert Oglesby. Spotted and edged, on White Ground : 1. Benjamin, Mr. Burman ; 2. (Eillet Parfait, Mr. Heward ; 3. Venus, Mr. Burman ; 4. Téméraire, Mr. Robt. Oglesby. Spotted and edged, on Yellow Ground : 1. Preciosa, 2. Lady Falconberg, and 3. Preciosa, Mr. Beecroft ; 4. Prince Galitzin, Mr. Bell. Stripes, on Yellow Ground : 1. Favorite Mignonne, and 2. Mélange des Beautés, Mr. Beecroft ; 3. Favorite Mignonne, Mr. T. Lambert ; 4. Mélange des Beautés, Mr. Beecroft. Stripes, on White Ground : 1. Téméraire, Mr. Bell ; 2. Oressus, and 3. Rose Invincible, Mr. Burman ; 4. Téméraire, Mr. Bell. White, and shaded White : 1. Argus, Mr. Beecroft ; 2. Princess Coburg, Mr. Bell ; 3. and 4. Princess Augusta, Mr. Percy. Stocks. Brompton : 1, 2, 3, and 4. Mr. Wadsworth, gardener to G. Egginton, Esq. Of any other description : 1, 2, 3, and 4. Mr. Wadsworth, gardener to G. Egginton, Esq. Best Bouquet, Mr. D. Brown. — *Culinary Vegetables.* Cauliflowers : 1. Mr. Robert Robson ; 2. Mr. Wadsworth ; 3. Mr. Robert Robson ; 4. Mr. H. Blundell. For the best plate of Vegetables (Rhubarb), Mr. George Donkin. (*Hull Advertiser*, June 25.)

July 5. The judges placed the flowers and fruit in the following order : —

Flowers. Society's Premium, Bowes's Lustre, Mr. Burman. B. Haworth, Esq.'s Premium, Duchess of Wellington, Mr. Wadsworth, gardener to G. Egginton, Esq. Pinks. Purple-laced : 1, 2, 3, 4, and 5. Bowes's Lustre, Mr. Burman ; 6. Jackson's Jubilee, Mr. Percy. Red-laced : 1. Duchess of Wellington, Mr. Wadsworth, gardener to G. Egginton, Esq. ; 2. and 3. George the Fourth, Mr. Burman ; 4. Duchess of Wellington, Mr. Wadsworth ; 5. George the Fourth, and 6. Bates's Seedling, Mr. Burman. Black and White : 1. Incomparable, Mr. Priest ; 2. and 3. Incomparable, Mr. Burman ; 4. Davey's Eclipse, Mr. Norman ; 5. Duchess of Devonshire, Mr. Robert Oglesby ; 6. Dormont's Suprême, Mr. Burman. Semi-double of any description : 1. Duchess of Devonshire, Mr. Norman ; 2. and 3. Bowes's Lustre, Mr. H. Blundell ; 4. and 5. Bowes's Cato, and 6. Bowes's Suwarrow, Mr. C. Oglesby. Roses. Moss : 1. White, Mr. Wadsworth ; 2. Providence, Mr. Allinson ; 3. Scarlet, Mr. Wadsworth ; 4. Single Red, Mr. Allinson ; 5. Prominence, Mr. Wadsworth ; 6. Prominence, Mr. Allinson. Plain : 1. Duke of Tuscany, Mr. Norman ; 2. Rose Unique, Mr. Wm. Priest ; 3. Burning Coal, and 4. Rose Unique, Mr. Robson ; 5. Rose Unique, Mr. Wm. Priest ; 6. Grand Swibb, Mr. Wadsworth. Bouquets : 1. Mr. D. Brown ; 2. Mr. R. Robson. — **Fruit.** Grapes. Best bunch of White (Haddington's White), weight 5 lb. 6 oz., Mr. Wadsworth, gardener to G. Egginton, Esq. Best bunch of Black, Mr. Thomas Holmes. Strawberries : 1. Wilmot's Superb, Mr. Robson ; 2. Wellington, Mr. Daltry ; 3. Manchester Hero, Mr. Norman ; 4. Keen's Seedling, Mr. T. Simpson, gardener to Mrs. Casson. (*Ibid.*, July 9.)

Aug. 5. The specimens were placed by the judges in the following order : —

Flowers. B. Haworth, Esq.'s Premium, Wilde's Surpasse-Perfection, Mr. D. Brown. Society's Premium, Paul Pry, Mr. Wm. Burman. Mr. B. Ely's Prizes : Purple-edged Picotee, Wadsworth's Queen Adelaide, Mr. Wadsworth, gardener to G. Egginton, Esq. ; Red-edged Picotee, Heward's William the Fourth, Mr. Deighton. Bizarra. Pink : 1. Paul Pry, 2. Heward's Kingston, and 3, 4. and 5. Cartwright's Rainbow, Mr. William Burman ; 6. Heward's Kingston, and 7. Paul Pry, Mr. Percy ; 8. Ranting Widow, Mr. Deighton. Scarlet : 1. Wilde's Surpasse-Perfection, 2. and 3. Ely's Mayor of Ripon, Mr. D. Brown ; 4. Wilde's Surpasse-Perfection, Mr. W. Burman ; 5. Wilde's Surpasse-Perfection, and 6. Ely's Mayor of Ripon, Mr. D. Brown ; 7. Wilde's Surpasse-Perfection, Mr. W. Burman ; 8. Wilde's Surpasse-Perfection, Mr. Deighton. Flakes. Purple : 1. Bates's Wellington, 2. Ely's Neptune, and 3. Turner's Princess Charlotte, Mr. Wm. Burman ; 4. Turner's Princess Charlotte, Mr. Wadsworth ; 5. Wilde's Mary Anne, 6. Pike's Cato, 7. Wood's Commander, and 8. Wilde's Mary Anne, Mr. Jos. Allinson. Pink : 1. Duchess of Devonshire, Mr. Wadsworth ; 2. Faulkner's 1st, and 3. Pollitt's Triomphe Royal, Mr. Burman ; 4. Duchess of Devonshire, 5. and 6. British Rose, Mr. Beecroft ; 7. Plant's Lady Hood, Mr. Burman ; 8. Duchess of Devonshire, Mr. Wadsworth. Scarlet : 1. and 2. Andrew Marvel (seedling), Mr. M. Bell ; 3. Madame Mara, Mr. Burman ; 4. Andrew Marvel, Mr. Bell ; 5. Madame Mara, Mr. Norman ; 6. Hufton's Hobhouse, Mr. Bell ; 7. Lord Hood, Mr. Norman ; 8. Madame Mara, Mr. Bell. Best seedling Carnation, Mr. Wadsworth. Picotees. Purple-edged : 1. Wadsworth's Queen Adelaide, Mr. Wadsworth ; 2. Ely's Lady Grantham, Mr. Burman ; 3. Wadsworth's Queen Adelaide, Mr. Wadsworth ; 4. Ely's Mrs. Lawrence, and 5. Mary Queen of Scots, Mr. Burman ; 6. Tate's Surpasse, Mr. Wadsworth ; 7. Rob Roy, Mr. Norman ; 8. Major's Beauty of Northampton, Mr. Burman. Red-edged : 1. Heward's William the Fourth, Mr. Deighton ; 2. Lee's Little Jonathan, and 3. William the Fourth, Mr. Heward ; 4. Will Scarlett, Mr. Norman ; 5. and 6. William the Fourth, Mr. Heward ; 7. Will Stukely, Mr. D. Brown ; 8. Lamb's Defiance, Mr. Burman. Yellow Ground : 1. General Ludd, Mr. Wadsworth ; 2. Goldfinch, Mr. D. Brown ; 3. Howlett's Paragraph, Mr. Norman ; 4. Alexander, Mr. Wadsworth ; 5. Goldfinch, Mr. Allinson ; 6. General Ludd, Mr. Wadsworth ; 7. and 8. Foreigner, Mr. Norman. Best Seedling Picotee, Mr. Wadsworth. First Bouquet, Mr. D. Brown. — **Fruit.** First Melon, Mr. W. V. Norman. Gooseberries. Red : 1. Roaring Lion, Mr. Allinson ; 2. Huntsman, Mr. Wadsworth ; 3. Crown Bob, Mr. Allinson ; 4. Sportsman, Mr. Smithson. White : 1. Eagle, Mr. Allinson ; 2. and 3. Toper, Mr. Wadsworth ; 4. Queen Caroline, Mr. Smithson. Yellow : 1. Rockwood, Mr. Allinson ; 2. Gunner, Mr. Wadsworth ; 3. and 4. Regulator, Mr. Smithson. Green : 1. Greenhood, Mr. Allinson ; 2. and 3. Ocean, and 4. Greenhood, Mr. Smithson. Best plate of Vegetables (Shallots), Mr. John Jones. Best plate of Fruit (Apples, of season 1829.), Mr. J. G. Lumb. (*Hull Packet*, Aug. 10.)

DURHAM.

Durham Botanical and Horticultural Society. — June 10. A Branch Meeting of this Society was held in Alnwick, when the prizes were awarded as follows : —

For the best Melon, the gold medal to Mr. Thomas Cook, gardener to T. W. Beaumont, Esq., M.P., Bywell Hall ; for the best half peck of Potatoes from the open ground, the silver medal to Mr. Robert Turnbull, gardener to the Rev. J. S. Ogle, Kirkley Hall ; for the best half peck of Peas, the silver medal to Mr. John M'Cleish, gardener to A. J. Cresswell Baker, Esq., Cresswell ; for the best Bouquet of Scarlet and White Brompton Stocks, the silver medal to Mr. Matthew Brewis, Alnwick ; for the best Exotic Plant in flower (*Crassula versicolor*), the silver medal to

William Burrell, Esq., Broome Park; and for the best Bouquet of Flowers, the silver medal to Mr. Benjamin Gibbinson, gardener to the Hon. General Grey, Falloden. We are sorry that a mistake was made in the Secretary's report of the last Meeting at Newcastle, the medals awarded to Mr. Lamb's gardener should have been *gold* instead of *silver*, as stated. (*Newcastle Courant*, June 25.)

NORTHUMBERLAND.

Botanical and Horticultural Society of Durham, Northumberland, and Newcastle upon Tyne. — July 9. The following prizes were awarded: —

For the best-flavoured pine-apple (Queen), the gold medal to Mr. William Kelly, gardener to A. Donkin, Esq., Jesmond. For the best Melon (Windsor prize), the gold medal, and for the best exotic plant in flower, *Brugmansia arborea*, the silver medal to Mr. A. Simpson, gardener to William Losh, Esq., Little Benton. For the best dish of Grapes, the silver medal to Mr. Joseph Clarke, gardener to Mrs. Bewicke, Close House. For the best dishes of Strawberries and of Cherries, silver medals to Mr. Thomas Cook, gardener to T. W. Beaumont, Esq., Bywell Hall. For the best bouquet of ten-week Stocks, the silver medal to Mr. Newton, nurseryman, &c. Newcastle. For the best bouquet of six double Ranunculuses, the silver medal to Mr. Matthew Bates, Kenton. For the best bouquet of twelve double Roses, of sorts, the silver medal to Mr. James Scott, gardener to Edward Charlton, Esq., Sandhoe. For the best bouquet of Chinese Roses, the silver medal; for the best bouquet of flowers, the silver medal; and for the best bouquet of Anemones, the bronze medal to Mr. Adam Hogg, at Mr. Falla's, Gateshead. For the best bouquet of six double Pinks of sorts, the silver medal to Mr. Thomas Gray of Humshaugh. The sum of three guineas, to the gardener for the greatest length of servitude, &c., was awarded to Mr. James Scott, gardener to Edward Charlton, Esq., Sandhoe. Two very large Orange Trees, covered with fine fruit, were sent to the exhibition by Mr. Hugh Robson, gardener to Charles Bacon, Esq., of Styford; for these the Committee voted Mr. Robson a silver medal. A fine seedling yellow Picotee, named William the Fourth, and several beautiful seedling plants, were exhibited by Mr. R. Telford, gardener to Francis Hartley, Esq., Middleton Lodge, Yorkshire; blossoms of two seedling Geraniums, raised by the Rev. Henry Wastell, Newborough, were also sent for exhibition, which the reverend gentleman named King William the Fourth and Queen Adelaide.

July 12. A Branch Meeting of the above Society was held in Durham, when the prizes were adjudged as follows: —

For the best-flavoured pine-apple, Black Antigua, the gold medal to Mr. John Robson, gardener to R. E. D. Shafto, Esq., Whitworth: this pine was the fourth fruit produced from the same plant in four successive years, the weight of the fruit being as follows: —

1827, May	5 lb.	1829, August	4 lb. 15 oz.
1828, September	5 lb. 7 oz.	1830, July	5 lb.

This is, we believe, an unparalleled performance in pine-growing, and does very great credit to Mr. Robson, who is an able pupil to that justly celebrated pine grower Mr. George Dale, gardener to William Russell, Esq., Brancepeth Castle. For the best Melon, the gold medal to Mr. James Ireland, gardener to William Donkin, Esq., Sandhoe. For the best dish of Grapes, the silver medal to Anick Smith, Esq., Langley Mill. For the best dish of Strawberries, for the best bouquet of Roses, and for the best bouquet of Flowers, silver medals to Mr. John Avery, gardener to W. Thomas Salvin, Esq., Croxdale Hall. For the best dish of Cherries (the Elton), the silver medal to Mr. George Dale, gardener to William Russell, Esq., Brancepeth Castle. For the best bouquet of six double Ranunculuses, the silver medal to Mr. John Harrop, Sunderland. For the best bouquet of six double Pinks, the silver medal to Mr. John Beckwith, gardener to Jacob Maule, Esq., Sellaby. For the best exotic plant in flower (*Agapanthus umbellatus*), the silver medal to Mr. William Atkinson, gardener to G. H. Wilkinson, Esq., Harperley Park. Some fine and very large Artichokes were exhibited by Mr. Frushard, from the garden of the prison, Durham. (*Ibid.*, July 17.)

Newcastle Botanical and Horticultural Society. — Aug. 12. The prize medals which had been awarded during the year were distributed to the successful competitors, and the following gentlemen were elected officers of the Society for the ensuing year: —

President, T. W. Beaumont, Esq., M.P. Vice-Presidents, John Hodgson, Esq. M.P., James Losh, Esq., Henry West, Esq. R.N., Matthew Culley, Esq., Dr. Headlam, James C. Anderson, Esq. Treasurer, John Anderson, Esq. Secretaries, Mr. William Falla, and Mr. G. A. Lambert. Committee, Sir R. S. Hawks, R. B. Sanderson, Esq., Rev. W. Turner, Mr. John Adamson, Mr. Thomas Milner, Mr. Thomas Hedley, Mr. T. M. Young, Mr. I. S. Crawford, Mr. T. Ferguson, Mr. William Wallis, Mr. Hetherington, J. L. Loraine, Esq., David Cram, Esq., J. F. Baird, Esq., Mr. James Archbold, Mr. William Dunlop, Mr. Joseph Grey, Mr. D. Laidler, Mr. Thomas Small, Mr. William Coates, jun., Mr. John Green, Mr. J. Bulman, and Mr. Matthew Anderson.

The members, to the number of forty, afterwards dined together, George Silvertop, Esq., the President of the Society for the last year, in the chair, supported by several country gentlemen. The chairman, in a very luminous speech, entered into a lengthened detail of the great benefits which had been derived not only from this but every other similar institution, which he described as being powerfully calculated to produce the best moral effects upon every branch of society. The Meeting was also most ably addressed by Mr. Orde, Mr. Clark, and Mr. Culley. Of delicious fruits there were upwards of eighty dishes (amongst them were four excellent pines from the garden of J. G. Clarke, Esq., at Fenham), the whole being liberally supplied by the following members of the Society, viz.: — The Right Hon. Lord Ravensworth, T. W. Beaumont, Esq. M.P., A. J. Cresswell Baker, Edward Charlton, M. J. Davison, Matthew Anderson, Humble Lamb, J. W. Parker, Armorer Donkin, James Archbold, John Straker, and J. G. Clarke, Esqrs., the Rev. Joseph Cook, and Mrs. Bewick. (*Ibid.*, Aug. 21.)

The Haddrick's Mill Gooseberry Show. — July 31. The prizes were awarded as follow: —

Red: 1. Bloodhound, 19 dwts. 16 grs., Mr. John Dees; 2. Bloodhound, 16 dwts. 19 grs., Mr. Thomas Hindmarsh. *Yellow*: 1. Rockwood, 19 dwts. 8 grs., Mr. John Dees; 2. Nelson's Waves, 16 dwts. 6 grs., Mr. Thomas Hindmarsh. *Green*: 1. No Bribery, 16 dwts. 6 grs., Mr. John Shipley; 2. No Bribery, 14 dwts. 12 grs., Mr. Robert Purvis. *White*: 1. Queen Anne, 14 dwts. 18 grs., Mr. James Dees; 2. Wellington's Glory, 14 dwts. 8 grs., Mr. Edward Laws. The Maiden Prize: 1. No Bribery, 16 dwts. 6 grs., Mr. John Shipley; 2. Prince Regent, 15 dwts. 4 grs. Mr. Robert Purvis. (*Ibid.*, Aug. 21.)

Newcastle Annual Carnation, Picotee, and Gooseberry Show. — Aug. 14. The prizes were awarded as follows : —

Flowers. Carnations: 1. Sherwood's Corinthian, and 2. Sandham's Lady Kay, Mr. John Bates; 3. Bulmer's Lord Manners, Mr. Andrew Buckham; 4. Pope's Queen, Mr. Pattison; 5. Hutchinson's Lady Ridley, Mr. Andrew Buckham. Picotees: 1. Pearson's Favourite, Mr. Hepple; 2. Seedling, Mr. Buckham; 3. Bates's Choice, Mr. John Bates; 4. Will Stukely, Mr. Hepple; 5. Prince of Picotees, Mr. John Bates. — **Fruit.** Heaviest Gooseberry, grown in any county, and produced by a subscriber: 1. Roaring Lion, 23 dwts. 14 gra., Mr. John Menham, grown by Mr. John Dees, Gosforth; 2. Roaring Lion, 23 dwts. 5 gra., Mr. Andrew Buckham, grown by Mr. Matthew Pyle, Stella; 3. Roaring Lion, 23 dwts. 4 gra., Mr. Thomas Donkin, grown by Mr. Jos. Clark, of Close House. Reds: 1. Roaring Lion, 22 dwts. 12 gra., Mr. John Dees; 2. Roaring Lion, 17 dwts. 10 gra., Mr. Michael Ford. Yellows: 1. Nelson's Waves, 17 dwts. 5 gra., Mr. Menham; 2. Viper, 17 dwts. 10 gra., Mr. Michael Ford. Greens: 1. Green Ocean, 19 dwts. 4 gra. Mr. John Dees; 2. Green Ocean, 14 dwts. 12 gra., Mr. Hepple. Whites: 1. Smiling Beauty, 14 dwts. 8 gra., Mr. John Menham; 2. Smiling Beauty, 13 dwts. 5 gra., Mr. John Knox. Maiden Prize: Nelson's Waves, 17 dwts. 12 gra., Mr. John Menham. (*Newcastle Courant*, Aug. 21.)

The Ponteland Florists' Society held their Show of Pinks on the 10th of July, when the prizes were adjudged as follows : —

1. Sprat's Glory of Abingdon, 2. Brooks's Eclipse, and 3. Harrison's Rising Sun, Mr. Robert Turnbull; 4. Conqueror, Mr. John Turner; 5. Gowland's Beauty, Mr. J. Oliver. (*Ibid.*, July 17.)

Corlodge Carnation, Picotee, and Gooseberry Show. — Aug. 7. The prizes were awarded as follows : —

Flowers. Carnations: 1. Harvey's Lord Ravensworth, and 2. Bulmer's Lord Manners, Mr. Michael Ford; 3. Hutchinson's Lady Ridley, 4. Queen Caroline, and 5. Stranger's Friend, Mr. John Menham. Picotees: 1. M'Queen's Choice, Mr. Andrew Buckham; 2. Bates's Sir Robert Wilson, Mr. Michael Menham; 3. Will Stukely, Mr. Michael Ford; 4. Menham's Fancy, Mr. Michael Menham; 5. Northumberland's Choice, Mr. John Menham. — **Fruit.** Gooseberries: The Maiden Prize, 1. Rockwood, 19 dwts. 12 gra., Mr. Robert Dawson. The Stewards' Prize. Red: 1. Lion, 20 dwts. 2 gra., Mr. John Dees; 2. Prince Regent, 19 dwts. 9 gra., Mr. Edward Lowdon. Yellow: 1. Royal Gunner, 22 dwts. 16 gra., Mr. John Dees; 2. Rockwood, 19 dwts. 16 gra., Mr. John Menham. Green: 1. Ocean, 14 dwts. 17 gra., Mr. Michael Ford; 2. No Bribery, 14 dwts. 14 gra., Mr. Ephraim Richardson. White: 1. Wellington's Glory, 16 dwts. 16 gra., Mr. Michael Ford; 2. Queen Anne, 13 dwts. 16 gra., Mr. Edward Shipley. There was an extra Stewards' and Maiden Growers' Prize, which was awarded to Mr. John Menham, for the Lion, 22 dwts. 8 gra. (*Ibid.*, Aug. 21.)

Florists of Monkwearmouth. — Aug. 9. At a Sweepstake Show of Picotees and Gooseberries, held at Mr. John Spence's, the prizes were adjudged as follows : —

Flowers. Picotees: Lamb's George Baker, Mr. William Hind; best Seedling Picotee, Mr. Thomas Davison. — **Fruit.** Gooseberries. Yellow: 1. Gorton's Viper, 23 dwts. Mr. Juggins. Red: 1. Crown Bob, 18 dwts. 10 gra., Mr. William Hind. Green: 1. Wardman's Green Ocean, 18 dwts. 4 gra., Mr. William Hind. White: 1. Cheshire Lass, 16 dwts. 4 gra., Mr. Juggins. (*Ibid.*, Aug. 21.)

Newcastle Annual Gooseberry Show. — Aug. 7. This Show was held at Mr. Richard Harker's, Gateshead Low Fell, when the prizes were adjudged as follows : —

1. Roaring Lion, 22 dwts. 18 gra., and 2. Gunner, 20 dwts. 18 gra., Mr. Robert Rickaby; 3. Green Ocean, 20 dwts., Mr. John Wilson; 4. Yates's Thrasher, 18 dwts., Mr. Robert Rickaby. (*Ibid.*, Aug. 21.)

The Ovingham Gooseberry Show. — Aug. 9. This Show was held at Mr. Isaac Johnson's, when the prizes were awarded as follows : —

1. Roaring Lion, 17 dwts. 9 gra., 2. Green Ocean, 15 dwts. 20 gra., 3. Whitesmith, 14 dwts. 16 gra., and 4. Viper, 14 dwts. 4 gra., Mr. John Lawson. A gooseberry was produced at the Meeting, grown by Mr. Edward Dobson, of Mounthully, which weighed 21 dwts., but he not being a member was not allowed to compete for the prizes. (*Ibid.*, Aug. 21.)

Burnapfield Gooseberry Show. — Aug. 14. The prizes were adjudged as follows : —

Red: 1. Crown Bob, 20 dwts. 5 gra., Mr. M. Hunter; 2. Crown Bob, Mr. W. Handcock; 3. Crown Bob, Mr. T. Robinson. **Green:** 1. Wardman's Green Ocean, 18 dwts. 22 gra., Mr. M. Hunter; 2. Green Ocean, Mr. T. Robinson; 3. Green Ocean, Mr. B. Pearson. **Yellow:** 1. Gordon's Viper, 18 dwts. 6 gra., Mr. M. Hunter; 2. Gordon's Viper, Mr. T. Rippon; 3. Gordon's Viper, Mr. T. Robinson. **White:** 1. Smiling Beauty, 18 dwts. 3 gra., Mr. M. Hunter; 2. Mr. R. Pearson; 3. Mr. M. Hunter, with a Seedling which he named William the Fourth. (*Ibid.*, Aug. 21.)

LANCASHIRE.

Liverpool Floral and Horticultural Society. — August 5. The following is a list of the various specimens to which prizes were awarded : —

Best Pan (silver cup): 1. Perfection (scarlet bizard), Paul Pry (pink bizard), Champion (scarlet flake), Geo. Crew (rose flake), Bellerophon (purple flake), Eclipse (red picotee), Hector (purple picotee), Mr. Wakefield, Manchester; 2. Perfection (scarlet bizard), Rainbow (pink bizard), Seedling (scarlet flake), Devonshire (rose flake), Cartwright (purple flake), Stukeley (red picotee), Cleopatra (purple picotee), R. F. Buckley, Esq., Chester; 3. Perfection, Paul Pry; Etna, Foote, Commander, Magnificent, Cleopatra, W. Leighton, Esq., Preston.

Stove Premiers: 1. *Cattleya Loddigiana*, Mr. A. Harrison; 2. *Crinum amabile*, Mr. Horsfall; 3. *Cypripedium*, Mr. Skirving. **Green-house Premiers:** 1. *Fuchsia cónica*, Mrs. Cropper; 2. *Cléthra arborea*, Mrs. Rathbone; 3. *Fuchsia microphylla*, Mr. Thomas Davis.

Plants. Stove: 1. *Strelitzia reginae*, Mr. C. Downie; 2. *Lagerstrœmia indica*, Mr. C. Tayleur; 3. *Bignonia grandiflora*, Mr. Dobson; 4. *Erythrina Crista galli*, Mr. S. Davis; 5. *Cattleya Forbesii*, Mr. A. Harrison; 6. *Didymocarpus Réxii*, Mr. Smith, Fulwood; 7. *Gloxinia hirsuta*, Mr. S. Davis; 8. *Cactus speciosa*, Mr. Smith. **Green-house:** 1. *Calceolaria arachnoides*, Mr. C. Cunningham; 2. *Fuchsia gracilis*, Mr. Skirving; 3. *Fuchsia tenella*, Mrs. Cropper; 4. *Elichrysium proliferum*, Mr. H. Wilson; 5. *Lechenaúlia formosa*, Rev. R. Gwillam; 6. *Salpiglossis picta*, Mr. Skirving; 7. *Astrosmœdia Ptelegrina*, and 8. *Moricandia Barclayana*, Mrs. Cropper. Pelargo-

plants 1 Delphinium, and 2 Doves' Nest, Mr Thomas Walker, 3 Apollo, Mr H Wilson, 4 Victory, Mr Thomas Davis, 5 Triumph, Mr Isaac Hudson, 6 Ann Bates, Mrs T D Dym, 7 Etna, 1 Veneranda, Mr G Cunningham, 2 Atterbury, and 3 Iveyana, Mr T Davis, 4 Am-
phibium minor, Messrs Whalley, 5 Thymus, Mrs Cooper, 6 Broom-bush, Mr T Davis, 7 Mar-
tiniana, 1 Portulaca oleracea, 2 and 3 Docks, 4 Campanula pyramidalis, and 1 Fuchsia
hybrida, Mr Thomas, 5 Gypsophila paniculata, and 3 Polka polyantha, 2 and 3 Docks, 4 Ma-
trixia grandiflora, Mrs Cooper, 5 Fuchsia, 6 Sweet William, 1 Rising Sun, Mr Potter, 2
Gaultheria, Mr Hilly, 3 Fuchsia, 4 and 5 Superba, Mr Wakefield, 6 Portulaca, Mr
James Griffiths, 7 Fuchsia, 8 Larch, 9 and 10 Lord Nelson, Mr Brown, 11 King of the
Hill, Mr Jackson, 12 Pink Braid, 1 Alfred, Mr Large, 2 Paul Pry, Mr Buckley, 3 Smiling,
Mr Jackson, 4 Royal, Mr Potter, 5 Etna, Mr Buckley, 6 Durham, Mr Griffiths, 7
Judy for Mr Buckley, 8 Smiling, Mr Pyke, 9 Royal Duke, 1 Mount Eden, Mr Potter, 2
Champion, Mr Wakefield, 3 Smiling, Mr Potter, 4 Mary, Mr Pyke, 5 Smiling, No 17,
Mr Large, 6 Hon Lyster, Mr Wakefield, 7 Smiling, No 2, Mr Large, 8 Smiling, Mr
Brown, 9 Hon Duke, 10 Larch, 11 and 12, Mr Pyke, 13 Lady Mary, Mr Griffiths, 14 Smiling,
Mr Turner, 15 Lady Mary, Mr Jackson, 16 Smiling Beauty, Mr John Appleton, 17 Larch,
Mrs Pyke, 18 Mary Anne, W Loughton, Esq, 19 Larch, Mr Hilly, 20 Purple Duke,
1 Charlotte, W Loughton, Esq, 2 Smiling No 1, Mr Large, 3 Royal George, Mr Buckley,
4 Waddington, Mr Wakefield, 5 Broom-bush, Mr Griffiths, 6 Smiling, Mr Pyke, 7 Can-
nibal, and 8 Larch, Mr Buckley, 9 Red Prince, 10 Larch, 11 Smiling, Mr Pyke, 12 Smil-
ing No 2, Mr Wakefield, 13 Pyke's Larch, 14 and 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30,
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961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990,
991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Rochdale Floral and Horticultural Society. — May 30. The prizes were

as follows:—

Plants: 1 *Arbutus* (17 old galls), Mr James Hoot, 1 *Arbutus* (17 old galls), Mr Robert
Baker, 2 *Arbutus* (17 old galls), Mr Henry Magley, 3 *Arbutus* (17 old galls), Mr Robert
Baker, 4 *Arbutus* (17 old galls), Mr Henry Magley, 5 *Arbutus* (17 old galls), Mr Robert
Baker, 6 *Arbutus* (17 old galls), Mr Henry Magley, 7 *Arbutus* (17 old galls), Mr Robert
Baker, 8 *Arbutus* (17 old galls), Mr Henry Magley, 9 *Arbutus* (17 old galls), Mr Robert
Baker, 10 *Arbutus* (17 old galls), Mr Henry Magley, 11 *Arbutus* (17 old galls), Mr Robert
Baker, 12 *Arbutus* (17 old galls), Mr Henry Magley, 13 *Arbutus* (17 old galls), Mr Robert
Baker, 14 *Arbutus* (17 old galls), Mr Henry Magley, 15 *Arbutus* (17 old galls), Mr Robert
Baker, 16 *Arbutus* (17 old galls), Mr Henry Magley, 17 *Arbutus* (17 old galls), Mr Robert
Baker, 18 *Arbutus* (17 old galls), Mr Henry Magley, 19 *Arbutus* (17 old galls), Mr Robert
Baker, 20 *Arbutus* (17 old galls), Mr Henry Magley, 21 *Arbutus* (17 old galls), Mr Robert
Baker, 22 *Arbutus* (17 old galls), Mr Henry Magley, 23 *Arbutus* (17 old galls), Mr Robert
Baker, 24 *Arbutus* (17 old galls), Mr Henry Magley, 25 *Arbutus* (17 old galls), Mr Robert
Baker, 26 *Arbutus* (17 old galls), Mr Henry Magley, 27 *Arbutus* (17 old galls), Mr Robert
Baker, 28 *Arbutus* (17 old galls), Mr Henry Magley, 29 *Arbutus* (17 old galls), Mr Robert
Baker, 30 *Arbutus* (17 old galls), Mr Henry Magley, 31 *Arbutus* (17 old galls), Mr Robert
Baker, 32 *Arbutus* (17 old galls), Mr Henry Magley, 33 *Arbutus* (17 old galls), Mr Robert
Baker, 34 *Arbutus* (17 old galls), Mr Henry Magley, 35 *Arbutus* (17 old galls), Mr Robert
Baker, 36 *Arbutus* (17 old galls), Mr Henry Magley, 37 *Arbutus* (17 old galls), Mr Robert
Baker, 38 *Arbutus* (17 old galls), Mr Henry Magley, 39 *Arbutus* (17 old galls), Mr Robert
Baker, 40 *Arbutus* (17 old galls), Mr Henry Magley, 41 *Arbutus* (17 old galls), Mr Robert
Baker, 42 *Arbutus* (17 old galls), Mr Henry Magley, 43 *Arbutus* (17 old galls), Mr Robert
Baker, 44 *Arbutus* (17 old galls), Mr Henry Magley, 45 *Arbutus* (17 old galls), Mr Robert
Baker, 46 *Arbutus* (17 old galls), Mr Henry Magley, 47 *Arbutus* (17 old galls), Mr Robert
Baker, 48 *Arbutus* (17 old galls), Mr Henry Magley, 49 *Arbutus* (17 old galls), Mr Robert
Baker, 50 *Arbutus* (17 old galls), Mr Henry Magley, 51 *Arbutus* (17 old galls), Mr Robert
Baker, 52 *Arbutus* (17 old galls), Mr Henry Magley, 53 *Arbutus* (17 old galls), Mr Robert
Baker, 54 *Arbutus* (17 old galls), Mr Henry Magley, 55 *Arbutus* (17 old galls), Mr Robert
Baker, 56 *Arbutus* (17 old galls), Mr Henry Magley, 57 *Arbutus* (17 old galls), Mr Robert
Baker, 58 *Arbutus* (17 old galls), Mr Henry Magley, 59 *Arbutus* (17 old galls), Mr Robert
Baker, 60 *Arbutus* (17 old galls), Mr Henry Magley, 61 *Arbutus* (17 old galls), Mr Robert
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Baker, 64 *Arbutus* (17 old galls), Mr Henry Magley, 65 *Arbutus* (17 old galls), Mr Robert
Baker, 66 *Arbutus* (17 old galls), Mr Henry Magley, 67 *Arbutus* (17 old galls), Mr Robert
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Baker, 70 *Arbutus* (17 old galls), Mr Henry Magley, 71 *Arbutus* (17 old galls), Mr Robert
Baker, 72 *Arbutus* (17 old galls), Mr Henry Magley, 73 *Arbutus* (17 old galls), Mr Robert
Baker, 74 *Arbutus* (17 old galls), Mr Henry Magley, 75 *Arbutus* (17 old galls), Mr Robert
Baker, 76 *Arbutus* (17 old galls), Mr Henry Magley, 77 *Arbutus* (17 old galls), Mr Robert
Baker, 78 *Arbutus* (17 old galls), Mr Henry Magley, 79 *Arbutus* (17 old galls), Mr Robert
Baker, 80 *Arbutus* (17 old galls), Mr Henry Magley, 81 *Arbutus* (17 old galls), Mr Robert
Baker, 82 *Arbutus* (17 old galls), Mr Henry Magley, 83 *Arbutus* (17 old galls), Mr Robert
Baker, 84 *Arbutus* (17 old galls), Mr Henry Magley, 85 *Arbutus* (17 old galls), Mr Robert
Baker, 86 *Arbutus* (17 old galls), Mr Henry Magley, 87 *Arbutus* (17 old galls), Mr Robert
Baker, 88 *Arbutus* (17 old galls), Mr Henry Magley, 89 *Arbutus* (17 old galls), Mr Robert
Baker, 90 *Arbutus* (17 old galls), Mr Henry Magley, 91 *Arbutus* (17 old galls), Mr Robert
Baker, 92 *Arbutus* (17 old galls), Mr Henry Magley, 93 *Arbutus* (17 old galls), Mr Robert
Baker, 94 *Arbutus* (17 old galls), Mr Henry Magley, 95 *Arbutus* (17 old galls), Mr Robert
Baker, 96 *Arbutus* (17 old galls), Mr Henry Magley, 97 *Arbutus* (17 old galls), Mr Robert
Baker, 98 *Arbutus* (17 old galls), Mr Henry Magley, 99 *Arbutus* (17 old galls), Mr Robert
Baker, 100 *Arbutus* (17 old galls), Mr Henry Magley.

globularis, Mr. Joseph Tate; 4. Azalea nudiflora, John Entwisle, Esq.; 5. Rhododendron viderum, Mr. Clement Royds; 6. Azalea pontica, Mr. Edward Hilton; 7. Ledum latifolium, Mr. Robert Robertson; 8. Rhododendron ferrugineum, Mr. George Haworth. Extra: Ledum Saxifolium, Mr. Joseph Tate. — *Flowers*. Tulips. Feathered Bizards: 1. Surpasse-Catafalque, Mr. John Dalton; 2. Trafalgar, Mr. Thomas Clegg; 3. Goude Beurs, Mr. John Whitworth; 4. Duc de Savoie, Mr. James Tweedale; 5. La Cantique, Mr. Joseph Sleath; 6. Little John, and Firebrand, Mr. John Etches. Flamed Bizards: 1. La Cantique, Mr. James Tweedale; 2. Surpasse-la-Cantique, Mr. James Taylor; 3. Seedling, Mr. John Scholes; 4. Phoenix, Mr. John Etches; 5. Unknown, Mr. George Scholes; 6. Lustre de Beauté, Thomas Clegg; 7. Pompey's Pillar, Mr. John Morton. Feathered Bybloemen: 1. Black Baguet, Mr. John Ecroyd; 2. General Washington, Mr. James Tweedale; 3. Ambassador de Holland, Mr. John Whitworth; 4. Laura, Mr. Alexander Fothergill; 5. Triomphe de Lisle, and 6. Bienfait, Mr. Thomas Clegg; 7. Incomparable, Mr. John Morton. Feathered Rose or Cherry: 1. Comte de Vergennes, Colonel Lee; 2. Sherwood's Rose, Mr. Thomas Clegg; 3. Do Little, Mr. James Taylor; 4. Duc de Bronte, Mr. Thomas Clegg; 5. Hero of the Nile, 6. Triomphe Royal, and 7. Rose Beau repère, Mr. William Crompton. Flamed Bybloemen: 1. Bienfait, Mr. James Tweedale; 2. Incomparable, Mr. John Etches; 3. Waller's Violet, Mr. John Dalton; 4. Grenadier, and 5. Vulcan, William Crompton; 6. Monsieur Pitt, Mr. John Etches; 7. Cramoisi la Fidelle, Mr. Thomas Clegg. Flamed Rose or Cherry: 1. Rose Unique, Colonel Lee; 2. Triomphe Royal, Mr. William Crompton; 3. Rose Vesta, Mr. John Wild; 4. Roi des Cerises, Mr. John Taylor; 5. Guerrier, Mr. Thomas Clegg; 6. Comte de Vergennes, Mr. John Whitworth; 7. Feu de Grande Valeur, Mr. William Crompton. Self-coloured: 1. Mine d'Or, Colonel Lee; 2. Breeder, Mr. John Etches; 3. Whitaker's Flag, Mr. James Tweedale; 4. Breeder, Mr. Henry Midgley. Basket of Flowers, John Entwisle, Esq. — *Fruit*. Grapes, Clement Royds, Esq. Apples, Mr. Ralph Craig. — *Culinary Vegetables*. Cucumbers: 1. Walker's New, Mr. Ralph Craig; 2. Longford, Mr. John Ashworth; 3. Unknown, Mr. John Schofield; 4. Unknown, John Entwisle, Esq. Mushrooms: 1. John Entwisle, Esq.; 2. Clement Royds, Esq. Rhubarb: 1. Mr. William Crompton; 2. Clement Royds, Esq. Potatoes: 1. Golden White, Mr. Joseph Aston; 2. Golden White Dwarf, Mr. Ralph Craig; 3. Unwin's Kidney, Mr. Robert Robertson. French Beans: 1. Mr. John Ashworth; 2. Rev. W. R. Hay. Asparagus: 1. William Mann, Esq.; 2. Mr. Ralph Craig. Sea-kale, Clement Royds, Esq. Lettuce, Mr. Ralph Craig. — *J. Ecroyd. Rochdale, July 3.*

Bolton Floral and Horticultural Society. — June 30. The following is a list of the successful competitors for the principal prizes: —

Plants. Stove: Lagerstrœmia indica (a silver cup), E. Silvester, Esq. Green-house: Alstrœmeria pulchella (a silver cup), Roger Holland, Esq. Erica Shannoniana, Roger Holland, Esq. Pelargoniums: Pinks, Roger Holland, Esq. Herbaceous: Delphinium grandiflorum, Roger Holland, Esq. Hardy Shrubs: Rhododendron maximum, E. Ashworth, Esq. — *Flowers*. Pinks: Pan (silver cup), Mr. James Faulkner; Premier prize, Suwarrow, Mr. Hawkesworth, Manchester; First class, Mr. Partington; Purple-laced, Lustre, William Leighton, Esq., Preston; Red-laced, Rosca, William Leighton, Esq., Preston. Ranunculuses, dark purple, Mr. Barber. Roses: 1. Moss, Mr. Barber; 2. Single, and 3. Double, William Hulton, Esq.; 4. Double White, W. Eckersley, Esq. — *Fruit*. Pine, Joseph Ridgway, Esq. Grapes, Hesperian, E. Ashworth, Esq. Nectarines, B. Rawson, Esq. Peaches, B. Rawson, Esq. Cherries, E. Ashworth, Esq. Black Currants, P. Ormrod, Esq. White Currants, Mr. T. L. Rushton. — *Culinary Vegetables*. Cucumbers, E. Ashworth, Esq. Lettuce, J. Ridgway, Esq. Turnips, W. Hulton, Esq. Celery, W. Hulton, Esq. Melon, J. Ridgway, Esq. Cauliflowers, R. Barlow, Esq. Onions, Mr. J. Moscrop. (*Bolton Chronicle, July 3.*)

SOMERSETSHIRE.

Bristol Horticultural and Botanical Society. — June 22. The specimens of fruits, flowers, &c., were of the choicest description, and the remarkably fine pines forced by Mr. Miller, on the hot-water system, attracted particular attention. Mr. Allen of Badminton, who was not a member of the Society, and consequently could not compete for the prizes, exhibited some specimens of fine laced pinks, which probably have never been exceeded. Among many others, the following plants were contributed to the exhibition: —

Pimelœa decussata; Erica ventricosa hirta; Erica reflexa flore albo; and a choice collection of roses, ranunculuses, and pinks, by Mr. Lee. Plumbago tristis, Polygala latifolia, and other flowering plants, by Mr. Fedden. Pimelœa decussata, Cactus speciosissima, Pentstemon ovatus, Galardia bicolor, Pelargonium Deverianum, and Pelargonium succulentum, by Mr. Miller. Phlox pyramidalis, Aster argophyllus, Pelargonium Nairnii, and Pelargonium essexianum, by John Hurle, Esq. Two samples of apple sugar, by Dr. Gingell, Thornbury, which, when that fruit is as abundant as it was last season, may be extracted at a remarkably low price.

The sugar extracted from apples was first brought into notice in this country by Mr. Salisbury, in his *Botanist's Companion*, appendix, vol. ii. p. 205. The late abundant crop of apples afforded such an opportunity of putting this portion of rural economy, so essentially necessary, into operation, that the cost of this excellent sugar did not exceed two-pence per pound.

Some beautiful plants, sent by G. Goldney, Esq., greatly contributed to the decoration of the room. Some of the productions of the kitchen-garden were very attractive from their size: a couple of cucumbers measured 18 in. in length. An improved hoe for turnips was sent by Mr. Salisbury. Prizes were awarded as follows: —

Plants. Stove: 1. Aloe, John Acraman, Esq.; 2. Cactus speciosissima, Mr. Maule. Green-house: 1. Alstrœmeria Pelegrina, Mrs. Ames; 2. Gloxinia speciosa, Mr. Verney. Ericas: 1. Ornata, H. Nugent, Esq.; 2. Ventricosa, Mr. Maule. Hardy Shrubs: 1. Kalmia latifolia, Mr. Maule; 2. Rhododendron hirsutum, Mr. Maule. Herbaceous: 1. Sarracenia purpurea, H. Nugent, Esq.; 2. Eschscholtzia californica, R. Bright, Esq. Annuals, Clarkia pulchella, Mr. Maule. — *Flowers*. Ranunculuses. Dark: 1. Mr. Maule; 2. Mr. Taylor. Light: 1. Mr. Maule; 2. Mr. Taylor. Pinks, Black and White: 1. Mr. Maynard; 3. Mr. Taylor. Purple-laced: 1. Mr. Hurle; 2. Mr. Maule. Selfs, Mr. Maule. Seedling: 1. Mr. Maynard; 2. Mr. Tiler. Rosca. Dark and Mottled: 1. Miss Swete; 2. Mr. Maule. Crimson: 1. Miss M. Swete; 2. Miss Swete. Light: 1. Miss Swete; 2. Miss M. Swete. — *Fruit*. Grapes. Black: 1. St. Peter's, P. J. Miles, Esq.; 2. Black Hamburgh, P. Protheroe, Esq. White: 1. Royal Muscat, P. J. Miles, Esq.; 2. Sweetwater, Mrs. Harford. Strawberries: 1. Wilmot's Superb, G. Yeeles, Esq.; 2. Keen's Seedling, R. Bright, Esq. Cherries: 1. May Duke, Mrs. L. Gregory; 2. May Duke, Mr. Gerrish. Currants. Red, Mrs. Cartwright. White: 1. J. N. Franklyn, Esq.; 2. Mrs. Cartwright. Black, Mr. Beard.

Melons: 1. Coronation, Mr. Verney; 2. Canteloup, W. Blathwayt, Esq. — *Culinary Vegetables*. Cauliflowers: 1. Mr. Maynard; 2. Mr. Sealey. Peas: 1. Mr. Cambauld; 2. W. P. Taunton, Esq. Beans: 1. Long-pod, Mr. Sealey; 2. Long-pod, Mrs. Cartwright.

Superior Merit. Lemons and Oranges, W. P. Jillard, Esq. Apples, Mr. John Beard. Ranunculuses, Mr. Tiler. Cockscombs, Rev. Mr. Richards. Potatoes, Mrs. L. Gregory. Cucumbers, Mr. Maule. Carrots, Mr. Maynard.

The Censors were, Messrs. Fedden, Masey, Rootsey, and Lee. (*Bristol Mirror*, June 26.)

DEVONSHIRE

South Devon and East Cornwall Botanical and Horticultural Society. — July 21.

The Second Exhibition of Botanical and Horticultural produce took place in the Town-Hall, Devonport. The chair being taken by G. Strode, Esq., of Newham Park; the Secretary, W. Hamilton, Esq. M.D., addressed the assembly at considerable length. We select the following passages:—

“Permit me to call your attention for an instant to a matter of equal interest to the horticulturist and the agriculturist, the study of *aëromancy*, or the art of regulating the operations of horticulture and husbandry by the phenomena of nature; a branch of useful study recommended to your notice by no less an authority than that of the immortal Linnæus himself. The inadequacy of almost every instrument hitherto devised for predicting the changes of the weather, and furnishing a practical guide to the labours of the garden, has been long and universally admitted. The information, however, which we vainly seek from those costly toys of the philosopher, Nature furnishes, as Linnæus long since pointed out, in her most common productions, at no other cost than that of observation. The opening of the buds, and the expansion of the leaves of trees, afford an unerring calendar for regulating our various operations, far more useful than the directions of Abercrombie or of Mawe, and adapted to every possible variation of climate, of season, or of latitude. If our crops prove unproductive, and barren harvests mock the hopes of the farmer, the cause is to be sought in our neglect of the instructive calendar which Nature herself offers for our acceptance, not only without price, but beyond price; and regulating the sowing of our crops by the artificial divisions of the year, rather than by those natural indications which alone mark with precision the arrival of the appropriate season.

“The leather, which I hold in my hand, has been tanned with a substance which I hope before long to see among the most productive of our imports, and superseding, in a great degree, the costly and ruinous culture of the cane in our West Indian Islands. The introduction of a substitute for bark in tanning may be viewed, perhaps, with alarm, as interfering with our own domestic interests; but this fear will vanish when I tell you, as the registers of the customs will attest, that upwards of three-fourths of the bark consumed by the tanner are of foreign growth, and purchased, not with the *manufactures* but the *gold* of Britain; while the importation of *dividivi* from our colonies will enable the planter to take a large portion of our manufactures in exchange, and, by adding to the resources of the master, augment the comforts of the servant. Of the superiority of this substance, not only as a substitute for the bark of the Continent, but also for the galls of Aleppo, and, indeed, for every other astringent substance hitherto known, except *catechu*, I have in my possession the most ample, and the most convincing evidence, furnished not by one individual, but by every person to whom I have had an opportunity of submitting it: and I gladly avail myself of this opportunity to express my obligations to Mr. Prideaux, and Mr. Tanner, of Plymouth, whose scientific experiments afforded me the first demonstrative evidence of its enormous value, and whose important report has been *more than corroborated* by the extensive experiments made at my request by Mr. Rootsey of Bristol, as well as at Sandwich, and in the Island of Jamaica.

“Among other productions of Mr. Pontey’s stove, which now claim your regard, I beg to call your attention particularly to a noble plant of the family of the pine-apple, whose magnificent flowering stem produced the fibre from which the cord before you, beautiful in its texture, and powerful in its strength, has been manufactured through the liberal zeal of your excellent president, Commissioner Ross. This plant, which is abundant in the province of Carthagera, and will, I hope, before long, be extensively cultivated in our West Indian Islands, is known by the name of *pita*: and is thus spoken of by the late learned prior, Don José Ignacio de Pomba, the friend of the great and lamented Mutis, and the natural historian of the province of Carthagera, in his work *On the Productions of the Province of Carthagera*:—‘We have also the *pita* in abundance in various parts of this province, but it has not been applied to any useful purpose hitherto. Among all the fibrous plants of the Old Continent which are known, none has a more tenacious fibre, nor one that is more capable of resisting the action of acids and humidity. It is superior to flax, to hemp, and to the *esparto* (of Spain), in durability and strength; and should be actively cultivated, spun, wove, and applied to all the uses to which the former are applied. Paper manufactured from this fibre would be superior in texture and quality, at least for printing, to that made from flax; and, perhaps, like that manufactured from silk or cotton, would not be subject to the depredations of worms and other insects, so destructive in this country (Carthagera), which would be a most important discovery for the preservation of books and documents of every description.’

“Should the specimen now before you disappoint your expectations, and appear to fall short of the praise bestowed upon it by the prior, it should be brought to mind under what disadvantages it labours; coming from a people sunk in sloth and ignorance, and deficient in the requisite knowledge of the proper time for cutting, and the proper method of preparing it. Under more favourable circumstances, and more judicious treatment, it will, I feel assured, fully realise the promises of the prior, and prove as superior to hemp in the strength and durability of its fibre, as it exceeds it in length and beauty. The importance of transferring our dependence for so important a portion of our marine stores, as the material for fabricating the cordage and sail-cloth of our navy, from the shores of the Baltic to our possessions in the West Indies, is too obvious, both in a commercial and political point of view, to call for demonstration.

“One plant more demands your notice, from its highly important qualities; and this is the celebrated *guaco plant*, now before you: one of the most powerful antidotes to animal poisons which have yet been discovered, as well as one of the most valuable remedies in some of the most cruel and dangerous maladies which afflict our nature. From recent experiments we have reason to hope that we shall find in it a sure and effectual remedy for that dreadful and hitherto incurable complaint which follows the bite of a rabid animal; while in gout, in rheumatism, in toothache, in fevers, and a multitude of other complaints, it has proved itself a sovereign remedy. But I shall not ask you to rely solely on my assertion, but support it by an extract

from the anniversary speech of one of our Honorary Presidents, Earl Stanhope, delivered at the meeting of the Medico-Botanical Society of London, in January last : —

“ ‘ He (Senhor Maldonado) confirms the statement which we had previously received respecting the efficacy of the *Mikania Guaco*, as an antidote against the bite of serpents ; and this very important fact was originally discovered by mere accident, in remarking that a bird, called the Guaco, which had been bitten by one of them, flew to the plant, and after rubbing itself upon the leaves, returned back to attack the reptile. This affords an additional proof of the great benefit to be derived from an attentive observation of the works of nature, which are no less instructive than interesting. So impressed is the author with the utility of this plant that he has employed five acres of land in its cultivation. The plant might, as he very properly suggests, be tried as an antidote in Europe against the bite of vipers ; and he thinks that its best preparation would be in the form of an extract. Nor is this the only virtue, valuable as it is, which is ascribed to the *Mikania Guaco* ; for it appears, by the statement of the author, that an infusion of the leaves in water is very beneficial in cases of diarrhoea, and that, by taking internally a decoction of the leaves, and by using it also as a bath, three persons recovered, in a very short time, the use of their limbs, of which they had been deprived, during seven or eight months, in two cases by rheumatism, and in the other by palsy. He states that it has been found to be very useful in the cure of fevers, for which he particularly recommends a mixture, in equal quantities of the *Mikania Guaco*, of the Donna annita, of the Bacquey, and of the Ponosi, reduced to powder ; and of this mixture a scruple is boiled in a cupful of water, and taken morning and evening. A single dose of this remedy cured two other patients, although, in all the four cases, the sulphate of quinine had been given without effect.’ ”

On conclusion of this address the Chairman read the following prize list : —

Plants and Flowers. Hot-house or Stove Climber : *Passiflora alata*, Mr. Pontey. Stove Shrub : *Astrapea Wallichii*, Mr. Pontey. Stove Bulbous Plant : *Pancratium ovatum*, J. Norman, Esq. Stove Succulent Plant : *Cotyledon orbiculata*, C. Horne, Esq., Stoke ; *Celsoia cristata* (six potted tender annuals), Mr. Pontey. Ericas (not less than six), Mr. Pontey. Australian Plants (not less than six), Mr. Pontey. Twelve Roses of sorts in a Bouquet, Mr. Brown. Six Carnations of sorts, Mr. Paul, Saltash. Twelve Georginas of sorts, Mr. Pontey. Six *G. anemoneflora*, Mr. Saunders. — **Fruit.** Pine-apple : 1. Mr. Sharland, gardener to the Duke of Northumberland, Werrington ; 2. Mr. Crawford, gardener to Lady Molesworth, Pencarrow. Bunch of Grapes (flavour) : 1. Mr. Saunders, gardener to E. P. Bastard, Esq., Kitley ; 2. Mr. Ellis, gardener to J. C. Bulteel, Esq., Lynham. Largest-berried, Mr. Saunders. Peaches, R. Bromley, Esq., Stoke. Apricots, Mr. Roberts, gardener to Commissioner Rosa. Highest-flavoured Melon : 1. Mr. Saunders ; 2. Mr. Sharland. Citrons, Lemons, Oranges, and Limes, Mr. Saunders. Pears (of this year's growth), Mr. Jackson, Beer. Apples (of this year's growth), Mr. Sims, gardener to the Rev. W. Radcliffe, Warleigh ; of last year's growth, Mr. Ellis, gardener to J. Bulteel, Esq., Fleet. Plums, Mr. Brown, Tamerton. Cherries, Mr. Ellis, gardener to Captain Morshead, Widey. Twelve largest Gooseberries : 1. Mr. Paul, Saltash ; 2. Mr. Barrett, Morice Town. Best-flavoured Gooseberries, Mr. Brown. Heaviest Thirty Bunches of White Currants, of Red Currants, and Black Currants (one pint), Mr. Ellis, Fleet. White Raspberries (one pint), Red (one pint), Mr. Brown. Strawberries : 1. Mr. Ellis, Widey ; 2. Mr. Ellis, Lynham. — **Culinary Vegetables.** Three Cauliflowers, Mr. Ellis, Widey. Kidneybeans (Dwarfs), Mr. Roberts, Dockyard. Brace of Cucumbers (grown on ridges), Mr. Roberts. Six Cos Lettuces, Mr. Webb, gardener, Penny-come-quick. Six Cabbage Lettuces, Mr. Webb.

Cottagers' Prizes. Three Roses of sorts, Mr. Potam, Devonport. Three Carnations, Mr. F. Wood, Plymouth. Three Picotees, Mr. Potam. Three Georginas, Mr. John Jarman, Plymouth. Bouquet of Stocks, Mr. Potam. Bouquet of Hardy Flowers, Mr. Jarman. Basket of Vegetables (not less than six sorts), Mr. Stapleton, Compton. Carrots, Mr. Wood. Potato Onions, Mr. Potam. Gooseberries, Mr. Wood. Largest Gooseberries, Mr. Jarman.

Extra-Prizes. Plants and Flowers. Bouquet of Poppies, C. Horne, Esq., Stoke. *Celsoia cristata*, Mr. Manning. — **Fruit.** Pine-apple : 1. Mr. Sharland ; 2. Mr. Keane, gardener to E. Tolcher, Esq., Ridgeway. Grapes : Mr. Buge, gardener to Rev. J. Lane, Coffleet ; T. Holberton, Esq., Yealington ; R. Bromley, Esq. ; and Mr. Ellis, Lynham. Rock Melon, Mr. Roberts, Dockyard, and Mr. Sharland. Mayduke Cherries, T. Holberton, Esq. Morello : 1. Mr. Paul, Saltash ; 2. Mr. Barrett. Citrons, Mr. Burge, Coffleet. — **Culinary Vegetables.** Fine Head of Cape Broccoli, Mr. Edmunds, gardener to C. Calmady, Esq., Langdon. Bunch of Altringham Carrots, Mr. Webb. Bunch of Horn Carrots, Mr. Manning, gardener to Admiral Sir Manley Dixon. Bunch of White Spanish Onions, Mr. Sharland. — **Cottagers' Prizes.** Seedling Geranium, Mr. Herring, warden in the Dockyard. Carnations, Mr. Potam.

Judges : — Plants and flowers, E. W. Churchill, Esq. Royal Marines, R. Luscombe, Esq., and Mr. Kane. Fruit, J. H. Luscombe, Esq., D. Little, Esq., and Mr. Kerr. Culinary Vegetables, R. Bromley, Esq., Mr. Brown, and Mr. Cummins. Cottagers' Prizes, Mr. Saunders, Mr. Bennett, and Mr. Sharland.

Among the plants from Pontey's nursery, besides the *Pita* and *Guaco*, noticed in the Secretary's address, we observed the following : — *Passiflora alata*, with beautiful flowers ; *Erica viridiflora*, furnishing a rare instance of a plant with truly green flowers ; *E. Savileana*, ampullacea, *Irbyana*, and many others. *Thunbergia alata*, *Combrètum purpureum*, *Dryandra nervosa*, *D. formosa*, and several sorts of *Gloxinias* and *Dracenas* ; *Canna bicolor*, *C. glauca*, *Cérbera fruticosa*, *Phyllanthus latifolius*, *falcatus*, and others ; *Chamærops Palmétto*, *Tamarindus indica*, *Ruellia Sabini*, *Pergularia odoratissima*, with its highly-scented flowers, *Quisqualis indicus*, *Vincas* of sorts, *Calanthe veratrifolia*, *Gloriosa superba*, *Maurandya Barclayana*, *Salvia involucrata*, *Verbena Melindres* and others ; *Pelargoniums* in great variety ; several sorts of *Acacias*, *Amaranthus*, *Crassulas*, *Lechenaultias*, *Calceolarias* ; a beautiful display of cockscombs, balsams, and globes, of different colours ; a great variety of Russian and Prussian stocks.

S. Fuge, Esq., furnished some fine Georginas, in pots, and several beautiful exotics ; J. Norman, Esq., some fine *Pancratiums*, *Crinums*, and orange trees with fruit ; and C. Horne, Esq., a great variety of plants. To Captain Morshead of Widey, the Society is indebted for the quantity of evergreens and flowers which he contributed towards the decoration of the room, as well as to Mr. Brown of Tamerton, for his beautiful bouquets, which attracted particular notice. (*Plymouth Journal*, July 29.)

AYRSHIRE.

The Ayrshire Green-house Society. — *Kilmarnock*, June 21. The different competitors stood as under : —

Plants. Herbaceous: 1. Mr. James Young, gardener to James Fairlie, Esq., Holms; 2. Mr. Robert Purvis; 3. Messrs. Dykes and Gentles; 4. Mr. George Paxton, Kilmarnock. *Delphinium grandiflorum*, *Papaver bracteatum*, *Thalictrum*, &c. Three Double Rockets: 1. Messrs. Dykes and Gentles; 2. Messrs. Fowlds and Lymburn; 3. Mr. Robert Purvis. — **Flowers.** Ranunculuses: 1. Mr. John Brown, Kilmarnock; 2. Messrs. Dykes and Gentles; 3. Messrs. Fowlds and Lymburn; 4. Mr. John Morton; 5. Messrs. W. and J. Samson; 6. Mr. Robert Purvis, gardener to John Smith Cunningham, Esq., Caprington. The principal flowers were, *La Téméraire*, *Mélange des Beautés*, *Adam's Spot*, *Agricola*, *Louissette*, *Crawford's Yellow Mottle*, *Cremona*, *Nankeen*, *Grand Monarque*, *Dr. Franklin*, &c. Double Anemone: 1. Messrs. Dykes and Gentles; 2. Mr. Robert Purvis; 3. Messrs. W. and J. Samson. — **Fruit.** May Duke Cherries: 1. Mr. John Brown; 2. Mr. Robert Purvis; 3. Mr. George Paxton. — **Culinary Vegetables.** Peas: 1. Mr. James Young; 2. Mr. Robert Purvis. Early York Cabbage: 1. Mr. James Young; 2. Mr. George Paxton; 3. Mr. Robert Purvis. Early Potatoes: 1. Mr. James Young; 2. Mr. Robert Purvis. Early Dutch Turnips: 1. Mr. Robert Purvis; 2. Mr. James Young.

Of extra-productions may be mentioned some very fine double georginas and strawberries, which were presented by Mr. John Brown; Seedling ranunculuses by Messrs. Fowlds and Lymburn, fine; early carrot, Malta and Altringham turnip, and green-house plants, by Mr. Robert Purvis, fine; potatoes, &c., by Mr. Hamilton, writer, Kilmarnock, fine; pinks, &c., by Mr. William Anderson, Kilmarnock; radish, by Mr. George Paxton; and geraniums, &c., by Mr. James Young. — *A Subscriber. Kilmarnock, June 28.*

The Competition between the Ayr and Kilmarnock Florists' Societies being this year for ranunculuses and pinks, they met at Kilmarnock on the 22d of June, and competed for the thirty six best in four classes; viz. nine striped, nine edged, nine mottled, and nine self-coloured. After careful inspection, the Judges awarded the first prizes to the Kilmarnock florists in all the four classes. Among the leading flowers may be mentioned, of striped, *Mélange des Beautés*, *Marbre de Paris*, *Céillet Naturelle*, *Phanta*, *Flagelle de Quatre Couleurs*, &c.; of edged, *Louissette*, *La Téméraire*, *Dr. Franklin*, *Boyd's Enterprise*, *Lady Gower*, &c.; of mottled and spotted, *Aimable*, *Pucelle*, *Cremona*, *Dalglish's Mrs. Hunter*, and *Dalglish's Diana*, &c.; of selfs, *Curtis's Yellow*, *Stewart's White*, *Condorcet*, *Pourpre Fonce*, *Orange*, *Brabançon*, &c. The flowers were allowed to be very fine, and in excellent condition. Of extra-articles were some very fine seedlings, presented by Mr. R. Boyd, Kilmaurs, and Messrs. Fowlds and Lymburn, Kilmarnock; and some very fine specimens of double rocket geraniums, cabbages, turnips, potatoes, and chives, by members of the Kilmarnock Horticultural Society; also some very fine cabbages, asparagus, turnips, and potatoes, by Mr. W. Telery, gardener to his Grace the Duke of Portland, from the Ayrshire Horticultural Society.

Ayrshire Green-house Society. — Kilmarnock, July 8. The competition was as under: —

Flowers. Pinks: 1. Mr. John Brown, Kilmarnock; 2. Messrs. William and Thomas Samson; 3. Messrs. Dykes and Gentles. The leading flowers were: *Davey's Bolivar*, *Galton's George the Fourth*, *Barratt's Conqueror*, *Bowes's Premier*, *Haslam's Ruler*, *Thomson's Princess Charlotte*, *Davey's Juliet*, &c. Roses: 1. Messrs. Fowlds and Lymburn, Kilmarnock; 2. Messrs. Dykes and Gentles; 3. Mr. Robert Purvis, gardener to John Smith Cunningham, Esq., Caprington; 4. Messrs. William and Thomas Samson; 5. Mr. James Young, gardener to James Fairlie, Esq., Holms. Leading flowers, *Tuscany*, *Mignonne*, *Grand Monarque*, *Stadtholder*, *Grande Cramoisié*, &c. Annuals: 1. Messrs. Dykes and Gentles; 2. Mr. Robert Purvis. *Larkspur*, *Lupins*, &c. Biennials: 1. Messrs. Dykes and Gentles; 2. Mr. John Brown; 3. Mr. Robert Purvis. *French Honeysuckles*, *Canterbury Bells*, &c. — **Fruit.** Rose-scented Strawberries: 1. Mr. Robert Purvis; 2. Mr. James Young; 3. Messrs. William and Thomas Samson. Strawberries: 1. Mr. James Young; 2. Messrs. William and Thomas Samson; 3. Messrs. Fowlds and Lymburn. — **Culinary Vegetables.** Early Horn Carrot: 1. Mr. James Young; 2. Mr. Robert Purvis. Early Dutch Turnip: 1. Mr. Robert Purvis; 2. Mr. James Young; 3. Mr. Andrew Kelly, Kilmarnock. Three Heads Cauliflower: 1. Mr. James Young; 2. Mr. Robert Purvis. Peas: 1. Mr. James Young; 2. Mr. Robert Purvis. Early Yellow Gooseberries: 1. Mr. Robert Purvis; 2. Messrs. William and Thomas Samson; 3. Mr. James Young.

Among the extra-articles were some very fine Double *Georgina coccinea* and *superba*, *Princess Alexandrina Victoria*, *Well's Victory*, &c., presented by Mr. John Brown. Flowers of *Antirrhinum*, *Gœum coccineum*, &c., by Messrs. Fowlds and Lymburn; *Arum maculatum*, *Ranunculuses*, *Malta turnips*, &c., by Mr. Robert Purvis. One of the largest strawberries (*Keen's seedling*) measured $3\frac{1}{2}$ in. in circumference, and weighed 12 dwts. — *A Subscriber. Kilmarnock, July 10.*

RENFREWSHIRE.

West Renfrewshire Horticultural Society. — June 22. The articles competed for were *Ranunculus*, early turnips, and peas, of which a large exhibition was made, and in quality were exceedingly fine. Besides these there were exhibited, as show articles, a splendid display of choice flowers, vegetables, &c. The Committee appointed to examine the articles, and report, awarded the prizes as follows: —

Flowers. Ranunculuses: 1. George Cunninghame, Esq., Port-Glasgow; 2. Mr. William MacDiarmid, gardener to James Hunter, Esq., Hafton; 3. Mr. John Sinclair, gardener. Dutch Turnips: 1. Mr. Adam Melross, gardener to Sir Michael Shaw Stewart, Ardgowan; 2. Mr. John Niven, gardener; 3. Mr. William M'Diarmid. Peas: 1. Mr. Duncan Fletcher, gardener; 2. Mr. John Sinclair; 3. Mr. Charles Miller, gardener to James Watt, Esq.

The show articles were arranged by the Committee according to their respective excellence, in the following order: —

Anemones: 1. Mr. Malcolm Service, gardener to Mr. Fairrie; 2. Mr. James Campbell, gardener, Gourrock; 3. Mr. John M'Nab, gardener to Lieutenant-General Darroch, Gourrock. Stocks: 1. Mr. Adam Melross; 2. Mr. Malcolm Service. There were exhibited by Mr. John Northwick, seedsman, three giant Cape stocks, which were particularly fine. Cucumbers, Mr. Malcolm Service. Early Carrots: 1. Mr. Adam Melross; 2. Mr. James Campbell. May Duke Cherries: 1. Mr. Archibald Brown, gardener, Park; 2. Mr. John Niven. These cherries were perfectly ripe, although exposed to the open air, and unaided by any artificial means. Bouquet of Flowers: 1. Mr. James Campbell; 2. Mr. Malcolm Service; 3. Mr. John M'Nab. Mr. M'Nab also exhibited a lot of very fine spring-sown lettuces. Mr. Adam Melross exhibited a beautiful orange tree, measuring upwards of 5 ft. in height, with fruit thereon as large as the common

orange, which was the first ever exhibited at any competition in this place. There was produced by Mr. John Borthwick a lot of very fine early potatoes.

Mr. Duncan Fletcher exhibited at a previous meeting a species of onion, named by him the multiplying sybo. This onion, we are informed, resembles very much the Welsh onion, but is more tender. The seed of it, when sown, does not bulb like other onions, but each onion multiplies at the root like that of shives, and the shoots being separated and planted out, each will produce upwards of twenty. A premium has been awarded to Mr. Fletcher for this valuable production. (*Greenock Advertiser*, June 25.)

West Renfrewshire Horticultural Society.—July 20. The exhibition, both of competition and show articles, was very extensive; and large bouquets of flowers decorated the hall on all sides. The prizes awarded by the committee chosen to determine the merit of the respective articles competed for were as follows:—

Roses: 1. Mr. Wm. Knox, gardener to Mrs. Dixon, Leven Grove, Dumbarton; 2. Mr. Malcolm Service, gardener to John Fairrie, Esq.; 3. Mr. John Borthwick, nursery and seedsman. Pinks: 1. Mr. Henry Knox, gardener to Jacob Dixon, Esq., Dumbarton; 2. Mr. Arch. Brown, gardener, Park; 3. Peter M'Inroy, gardener to Mrs. M'Inroy, Leven. Cauliflower: 1. Mr. Chas. Miller, gardener to James Watt, Esq.; 2. Mr. Wm. Knox; 3. Mr. John M'Nab, gardener to Lieut.-General Darroch, Gourrock. Melon: 1. Mr. Adam Melross, gardener to Sir Michael Shaw Stewart, Ardgowan; 2. Mr. Malcolm Service.

The show articles were arranged by the committee, according to their respective merit, in the following order:—

Strawberries: 1. Mr. John Sinclair, gardener, Wood; 2. Mr. William Knox; 3. Mr. Archibald Brown. Gooseberries, three of a sort: 1. Mr. Wm. Knox; 3. Mr. Henry Knox; 3. Mr. John M'Nab. Currants: 1. Mr. Wm. Knox; 2. Mr. Archibald Brown; 3. Mr. Henry Knox. All of which were very large, and quite ripe. Turnip: 1. Mr. John M'Nab; 2. Mr. Adam Melross. Iris: 1. Mr. Malcolm Service; 2. Mr. Henry Knox. Bouquet of Flowers: 1. Mr. Malcolm Service; 2. Mr. James Campbell, gardener, Gourrock; 3. Mr. John Borthwick.

Besides these, there were many others contributed. Mr. Henry Knox exhibited a specimen of that much admired annual *Collinsia grandiflora*; two lots of very fine seedling pinks by Mr. Malcolm Service and Mr. Henry Knox. A beautiful seedling carnation, crimson bizard, was exhibited by Mr. Malcolm Service, named "Service's William the Fourth;" a lot of fine georginas, several very large cabbages, and a number of fine Cape stocks were also exhibited by Mr. Malcolm Service. A lot of excellent spring-sown lettuces, by Mr. John M'Nab; who also exhibited a well executed, full-length figure of a man composed of flowers; two lots of very fine raspberries were contributed by Mr. Thomas Grey, Plantation, and Mr. Charles Miller; with numerous other vegetables and flowers, by the members generally. (*Greenock Advertiser*, July 23.)

STIRLINGSHIRE.

Stirling Horticultural Society.—July 13. Prizes were awarded as follows:—

Flowers. Roses: 1. Mr. Ninian Niven, gardener to James Stirling, Esq., of Keir; 2. Mr. John Macinnes, gardener to Robert Bruce, Esq., of Kennet; 3. Mr. Jas. Macfarlane, Stirling. China: 1. Mr. John Macinnes; 2. Mr. John Gow, gardener to Count Flahault, Tullyallan Castle; 3. Mr. John Christie, Causewayhead. Stocks, Double: 1. Mr. James Macfarlane; 2. Mr. William Moir, gardener to Mrs. Edmond of Comely Bank. Pinks: 1. Mr. Robert Kay, Shiphaugh; 2. Mr. John Mitchell, gardener to William Murray, Esq., of Polmaise; 3. Mr. Ninian Niven. Sweetwilliam. Double: 1. Mr. Ninian Niven; 2. Mr. John Gow; 3. Mr. Wm. Laing, gardener to Col. Simpson of Plean. Single: 1. Mr. Hugh Macoll, gardener to James Callander, Esq., of Craigforth; 2. Mr. Ninian Niven; 3. Mr. Wm. Moir, gardener to Mrs. Edmond of Comely Bank. Ranunculus: 1. Mr. John Christie; 2. Mr. Wm. Moir. — *Fruit.* Strawberries: 1. Mr. John Macinnes; 2. Mr. Wm. Somerville; 3. Mr. David Trotter, gardener to James Johnston, Esq., of Alva. Cherries: 1. Mr. John Macinnes; 2. Mr. W. Somerville; 3. Mr. William Gow, gardener to John Murray, Esq., of Wester Livilanda. — *Culinary Vegetables.* Cauliflower: 1. Mr. John Macinnes; 2. Mr. George Milne, gardener to Robert Stein, Esq., of Killlagie; 3. Mr. John Gow. Turnip. Yellow: 1. Mr. John Macinnes; 2. Mr. George Milne; 3. Mr. Wm. Somerville, gardener to Wm. Stirling, Esq., of Kippendavie. Carrots, Early Horn: 1. Mr. Hugh Macoll; 2. Mr. Wm. Moir; 3. Mr. John Macinnes. Lettuce: 1. Mr. Wm. Moir; 2. Mr. Ninian Niven; 3. Mr. Hugh M'Coll. (*Stirling Advertiser*, July 16.)

ABERDEENSHIRE.

Aberdeenshire Horticultural Society.—May 26. The following was the order of merit, as decided by the judges:—

Plants. Green-house: 1. A package of various plants, particularly the *Cactus speciosa*, *Ashlea indica alba*, *Mesembryanthemum includens* and *spectabile*, *Bluetia hyacinthina*, *Gorteria Pavonia*, *Eupacris grandiflora*, *Sparganium lineare*, *Melaleuca splendens*, four *Ericas*, and six new *Geraniums*, Mr. William Frazer, nurseryman, Ferryhill; 2. A collection in full flower, particularly the *Streptocarpus reginae*, Mr. William Anderson, gardener to D. Young, Esq., of Cornhill; 3. A collection, many of them new and rare, amongst which were the *Lupinus polyphyllus*, *Gium coccineum majus*, *Calceolaria arachnoides*, *C. connata*, *C. floribunda*, *C. plantaginea*, *Littæa geminiflora*, *Isopogon anemonifolius*, *Lechenaultia formosa*, *Correa speciosa*, *Pultenæa candida*, *Brachysoma latifolia*, and *Cypripedium arietinum*, Mr. W. Davidson, jun. Pelargoniums: 1. Mr. W. Davidson, jun.; 2. Mr. James Walker, nurseryman; 3. Mr. Wm. Gallow, gardener to Sir M. Bruce, Bart. — Flowers. Tulips: 1. Alexander Bell, Esq., Crown Street; 2. Mr. D. Taylor, gardener to Wm. Annand, Esq., of Belmont; 3. Alexander Bell, Esq., Crown Street. Anemones (only one parcel offered for competition), Al. Bell, Esq. Stocks: 1, and 2. Mr. James Forbes, merchant; 3. Capt. Anderson, Skene Square. Wallflowers, Captain Anderson. — *Fruit.* Strawberries: 1. Roseberry, Mr. Thos. Milne, nurseryman, Sunnyside; 2, and 3. Keen's Seedling, Mr. G. Cardno, gardener to G. Hogarth, Esq., Woodhill.

An extra-medal was awarded to Mr. Robert Davidson of Elmfield, for a basket of very fine grapes, in full perfection. He had ripe grapes a month ago. The judges awarded the Society's large silver medal to Alexander Bell, Esq.; for his tulips, they being deemed the best articles at the Show. The Society's small silver medals were awarded to all the other first articles; there were no second or third prizes given upon this occasion. — J. J. M.

June 22. The Third Competition took place in the New Inn, when medals and premiums were awarded as follows:—

Flowers. *Ranunculuses*: 1. Captain Clyne; 2. Mr. Wm. Davidson, jun. *Anemones*, Double: 1. Mr. Thomas Milne; 2. Mr. Wm. Smith, gardener to James Hadden, Esq., Grandholm Cottage. *Pinks*, Mr. Thomas Milne. *Irises*: 1. and 2. Alexander Bell, Esq. — *Fruit*. *Grapes*: 1. and 2. Black Hamburgh, Mr. William Anderson, gardener to D. Young, Esq., of Cornhill. *Cherries*: 1. May Duke, Mr. John Wood, gardener to Sir R. D. H. Elphinstone; 2. May Duke, Mr. William Barron, gardener to Colonel Campbell of Black-hall; 3. May Duke, Mr. John Wood. — *Culinary Vegetables*. *Cauliflowers*: 1. Mr. David Taylor, gardener to W. Annand, Esq., Belmont; 2. Mr. David Gairns, gardener to J. Mitchell Nicholson, Esq., of Glenbervie. *Potatoes*. Kidney (grown in the open ground): 1. Mr. Robert Davidson, Elmfield; 2. Mr. Thomas Milne, in consequence of Mr. William Lawson, gardener to Major Fisher, Devanha, and Mr. George Hardie, gardener to Sir Robert Burnett, Crathes, not being present to answer questions by the judges. Both their potatoes were better than Mr. Milne's. *Melon*: 1. Golden Rock, Mr. William Wales, gardener to Colonel Duff, Fetteresso; 2. Reeve's Rock Cantaloup, Mr. Peter Archibald, gardener to W. Moir, Esq., of Park. *Cucumbers*: 1. White Turkey, Mr. David Gairns; 2. Halley's Long Green, Mr. John Davidson, gardener to the Right Hon. Lord Kennedy, Dunottar.

* **Extra-Prizes.** 1. A splendid bouquet, containing, among other things, *Lupinus polyphylus*, *Mimulus moschatus*, *M. luteus* var. *rivularis*, *Verbena pulchella*, *V. Melindres*, new *Geraniums* and *Calceolarias*, Mr. William Davidson, jun.; 2. Six new *Ranunculuses*, imported last autumn from Rome: two of them were uncommonly large, and the whole were beautiful.

The best *Ranunculuses*, *Anemones*, and *Peas*, and the second best *Cucumbers*, were brought forward by Mr. Wm. Jack, gardener to J. Cruickshank, Esq., of Langley Park, but a little too late to enjoy the benefit of competition. Owing to the late very unfavourable weather, there was rather a paucity of flowers, and there was only one specimen of strawberries (the Rose), which was sent from the garden of Mr. Alexander Aitken, Upper Strawberry Bank; there were also offered for competition, other three specimens of peas, viz. from Mr. Duncan Cadenhead, Strawberry Bank; from the garden at Aboyne Castle; and from the garden at Murtle; but the judges did not think any of them worthy of being placed on the prize table. A mushroom, rather uncommon in this quarter, and somewhat curious, was sent from the garden at Murtle; it is produced from the mushroom-stone, a specimen of which was handed to the Society. The Society's large silver medal was awarded to Mr. Thomas Milne, for his productions at this competition, and small medals to the persons having the other first articles. Garden Duff, Esq., of Hatton, and William McCombie, Esq., of Easter Skene, were elected members of the Society. (*Aberdeen Journal*, June 30.)

July 14. The Fourth Competition took place in the New Inn, when medals and premiums were awarded to the following competitors:—

Mr. John Davidson, gardener, Dunottar, medal for first *Pinks*, first *Cherries* (the May Duke), third *Pinks*, third *Melon* (Pinky House, green-fleshed), third *Strawberries* (Keen's Seedlings), third preserved *Apples* (Golden Reinettes and Nonpareils). Mr. William Smith, gardener to James Hadden, Esq., Grandholm Cottage, the small medal, for first red, white, and black *Currants*, first and second preserved *Apples* (the Oakon Pine). Small medals were also awarded to Mr. Alexander Malcolm, gardener, Damside, for the first and second seedling *Carnations*, second and third *Gooseberries* (the White Bear and the Early Yellow), and second *Strawberries* (own Aberdeen Seedling). To Mr. David Taylor, gardener to William Annand, Esq., Belmont, for six seedling *Pinks*, and second *Cauliflower*. To Mr. David Gairns, gardener to J. M. Nicholson, Esq., Glenbervie, for the first and second seedling *Double Roses* (the first flowers), and the third best six *Irises*. To Mr. James Cruickshank, gardener, Cotton, for the first twelve *Stage Carnations*. To Alexander Bell, Esq., for the best six *Irises*. To Mr. James Alexander, gardener to John Thorburn, Esq., of Murtle, for the best twelve *Double Roses*. To Mr. Robert Burnett, gardener to George Forbes, Esq., Springhill, for the best melon (the Netted Green-flesh). To Peter Cheyne, Esq., Loch Head, for the best *Gooseberries* (the Phoenix), and the third best *Double Roses*. To Mr. William Lawson, gardener to Basil Fisher, Esq., Devanha, for the best three heads of *Cauliflower*. To Mr. Duncan Cadenhead, Strawberry Bank, for the best *Strawberries*, (the Rose). To Mr. William Davidson, jun., an extra-medal for six beautiful *Double Georginas*. Mr. Davidson had also the second best six *Irises*.

The other successful competitors were: Mr. P. Archibald, gardener to W. Moir, Esq., of Park, the second *Melon* (the Windsor Prize), the second *Cherries* (the Whiteheart), and the second red, white, and black *Currants*. Mr. Thomas Milne, Sunnyside, the second best *Stage Carnations* and *Pinks*. Mr. William Fraser, Ferryhill, the second best *Double Roses*. Mr. D. Smith, gardener to the Right Hon. the Earl of Aboyne, Aboyne Castle, the third red, white, and black *Currants*. Mr. George Johnston, gardener to the Right Hon. the Earl of Aberdeen, Haddo House, the third best *Cherries* (the May Duke). Mr. J. I. Massie, the fourth best six *Irises*.

The London Horticultural Society's large silver medal was delivered to Mr. D. Gairns, gardener to James Mitchell Nicholson, Esq., of Glenbervie, he being the most successful competitor at this Society during the season 1829.

Mr. Adams, schoolmaster at Banchory, sent a basket of seedling *Irises* for the extra-prize, but omitted to give any open detailed account of them; they not being of the very first quality were laid aside. It, however, came afterwards to the knowledge of the Meeting that they were seedlings, and the thanks of the Society were in consequence voted to Mr. Adams.

The tables were decorated with a superb basket of flowers, brought by Mr. W. Anderson, gardener to D. Young, Esq., of Cornhill. This collection consisted of the *Acacia decurrens*, *Cobæa scandens*, *Passiflora cæruleo-racemosa*, *Cactus speciosa*, *Gladolus cardinalis*, *Mimulus moschatus*, *Calceolaria integrifolia*, *Physalis peruviana* (an excellent fruit), and about forty others, including the *Symphytum asperum*, a plant well deserving the attention of the agriculturist, &c. &c. Mr. Walker also had a splendid basket of *Irises*, *Ranunculuses*, and *Anemones*; and Mr. William Davidson, jun. had several new flowers in pots. (*Aberdeen Journal*, July 21.)

ART. X. Obituary.

DIED at Harlow, Essex, on the 25th of July, in the eighteenth year of his age, *William, eldest son of Daniel French*, who has been many years gardener to W. H. Dobson, Esq., of the same place. This amiable and

promising young man met his death in a very melancholy manner : — ~~He~~ had long been upon terms of intimate friendship with a neighbouring youth, eldest son of Mr. Winch, a respectable master-bricklayer ; and on the evening preceding the fatal event, Winch, having been employed in taking up a copper, and being obliged to go out with his father's cart on business before he had time to clean himself, proposed to young French, who had accompanied him for a ride, after he came from work, to go to the river to bathe on the following morning. Accordingly, after breakfast, the other children being gone to the national school, French held a very interesting conversation with his father for a considerable time, and then left the house, without saying where he was going, his father going up stairs to dress himself at the same time. The subject of this memoir and his friend went together to a bathing-place, three miles off, below Latton mill, where, it appears, they met with a disagreeable party, in consequence of which they left the place, and went about two miles higher up, to Harlow marsh, where, ignorant of its depth, they selected as the most private spot that which afterwards proved so fatal. The river at this place flows over spongy ground, and forms a hole of an oval shape, 15 ft. deep. Plunging in at once, it is supposed that Winch lost his ground, and that French, who could swim, making to his assistance, caught fast hold of him, and both went down together, most probably never rising again, as French was found with Winch fast clinging to him. Thus died this amiable and respected youth, in the act of attempting to save the life of his friend. He had been nearly five years at the nursery of Messrs. Rivers, highly respectable nurserymen of Sawbridge-worth, Herts ; and was lately removed and placed under Mr. Terrence, gardener and steward to — Selwin, Esq., of Down Hall, Essex. He was strictly honest ; and so prudent that any thing might be confided to him. His temperance and industry were remarkable ; and his frugality was such, that he would not lay out a penny for any thing that was not necessary. His quietness and orderly habits are borne testimony to by his late worthy employer ; the constant neatness and cleanliness of his person and dress won the admiration of the neighbourhood ; and so moral was his conduct, that an obscene word was never known to escape his lips. His countenance bore the stamp of manly innocence, and his look and gait indicated study. He was rapidly improving in his profession, and pursuing the course which his father had always endeavoured to impress upon him. That father, therefore, saw and indulged the pleasing hope of his son's future advancement in life ; but the flower is cut off in the bud ; and were it not for the consoling reflection that his short life on earth was well spent, and that he is thus early removed to a brighter region, where sorrow is known no more, his afflicted parents would be inconsolable. Such is the brief outline of the character of this humble gardener lad, of whom it may be said, not only to the young gardener, but to the general reader, " Go thou and do likewise." — *J. S. Harlow, August 30.*

*Mr. Rigg, a nurseryman at York, with his whole family, consisting of Ann Guthrie Rigg, the eldest daughter, in her 20th year ; Thomas Garwood Rigg, the eldest son, aged 18 ; John Rigg, the second son, aged 16 ; Eliza Rigg, the second daughter, in her 16th year ; James Smith Rigg, aged 7 ; and Charles Rigg, aged 6 ; with Miss Grace Robinson, of Ayton, near Scarborough, about 18, who was on a visit at Mr. Rigg's, all perished in the Ouse, while sailing down that river, in a small boat, on the 19th of August last. The verdict of a coroner's jury was : — " We find that the deceased were all accidentally drowned, and lay a deodand of 21*l.* on the vessel." (Times.)*

THE
GARDENER'S MAGAZINE,
DECEMBER, 1830.

PART I.
ORIGINAL CORRESPONDENCE.

ART. I. *Notes and Reflections made during a Tour through Part of France and Germany, in the Autumn of the Year 1828.* By the CONDUCTOR.

(Continued from p. 531.)

THE *Gardens of the Luxembourg* resemble in general character those of the Tuilleries; but near the palace they are, perhaps, more ornamented with statues, and with basins of water. A defect which strikes a stranger, at first sight, is, the ascent from the platform in front of the palace to the central avenue. This ascent is much too near for dignity of effect. Had it been considerably greater it would have had a character of its own, and might have proved a feature of interest: as it is, it militates against the idea of freedom of choice as to situation, or of liberty to extend operations on every side; and, consequently, against general grandeur of expression. The avenue is long and flat, and its termination is bad, — a common-place observatory tower in the horizon, backed by the sky. Notwithstanding these disadvantages, the groves, or *bosquets* as they are called, are good of their kind, and constitute great luxuries in the midst of a crowded populous city. Trees, indeed, never come amiss, provided they are healthy, and they redeem in France, as in England, many of the deformities of artificial landscape. To sit down in the interior of one of these groves; to look through the multitude of trunks of trees, which intervene between the eye and the distant crowds in the open parts

of the garden; and to hear, at the same time, the faint murmurs of the thousands of human voices, occupied, we may suppose, with as many different topics, constitute to us the greatest enjoyment afforded by these gardens.

The Garden of the Palais Royal, once called the Garden of the Revolution*, deserves to be mentioned for the beautiful verdure of the turf, maintained by nightly waterings during the summer season. We were very curious to ascertain, if possible, what species of grass succeeded so well with this treatment; because a grassy surface similarly treated at Caserta, near Naples, was, when we saw it in 1819, comparatively coarse and tufty. We could not determine this exactly, but we think the species were chiefly *Lolium perénne*, and *Poa triviàlis* and *ánnea*.

Nothing could be easier than to cover the whole of this garden, from colonnade to colonnade, with a glass roof, which might be opened and shut instantaneously by machinery, on the principle which we have elsewhere suggested. (*Encyc. of Gard.*, § 1610. and 6179.) The soil and the atmosphere within might be heated by hot water, or by steam; and the area laid out as a Sicilian, Andalusian, or tropical garden. Orange trees planted in the ground would, so treated, thrive as well here as they do at Auteuil, at the villa of M. Terneaux; and palms as well as they do in the south of Spain. Before this plan is pronounced to be either difficult, expensive, or impracticable, we must request the reader to examine what we have written on the subject of hot-houses. He will find that by having the glass roof in small copper or iron sashes, glazed with small panes, and balanced on pivots, the whole of the sashes might, by a sympathetic movement, be opened to the perpendicular to admit a shower of rain, or to any smaller angle, to admit air, or the direct rays of the sun, with as much ease as common Venetian window-blinds. The surrounding sides of this garden being already erected would considerably lessen the expense, which, independently of the gardening required, would be little more than that of the roof and of some scores of cast-iron columns, varying in height from those of the surrounding colonnade, to the elevation deemed requisite for the central part of the garden; say, 100 ft. These columns need not contain much metal, and may be cased in a frame of wire-work, to be covered with

* *Les Préjugés détruits*. Par J. M. Lequinio, Membre de la Convention Nationale de France, et Citoyen du Globe. A Paris; chez Desenne et Debray, Libraires, au *Jardin de la Revolution*, ci-devant le Palais Royal. 1792. This work, we understand, is in the course of translation, for a newly projected *Library of Useful Knowledge*.

climbers, as in the botanic conservatory at Syon.* We will not indulge in imagining what might be done in laying out and planting the garden, thus enclosed; which, when finished, we would, of course, have open to all the world, as the Palais Royal is at present. It should be properly lighted with gas, enlivened by fountains, and peopled with exotic birds and insects, kept from escape (when the windows were opened) by wire netting thrown over the roof, and by double doors at the different entrances. On the occasion of great national fêtes, bands of music might be introduced; and at all times there might be demonstrators of botany and natural history, serving also as curators to answer scientifically the enquiries of the curious. Every plant and tree might have its name and other particulars affixed, as in the garden of the Horticultural Society. The shops in the Palais Royal would remain, and business would be transacted in them as at present. All the difference would be that the temperature would be milder. The birds and insects would shun the crowd in the colonnade, and keep to the centre of the garden, as being the part the most umbrageous and retired.

The present head of the French government being, as a private individual, immensely rich, he might form such a garden and present it to the people, on whom it certainly would not be lost. We should be proud to assist (*gratis* of course) in forming the plan. The time is not yet come for the people to form such a garden for themselves: but, as exotic scenes of this kind must in all countries, by all people who have enjoyed them, be felt as a great luxury; and as whatever is ardently desired by a whole people is certain of being obtained; such gardens will, we have no doubt, be eventually found in all the great cities in the world. We have seen the attempts of Catharine and Potemkin, which were certainly nothing to what may now be done, but still something, relatively to the times in which they were produced. Tropical gardens will be formed in the capitals of the kingdoms of the temperate and frigid zones; and temperate and frigid gardens in the torrid zone. New and easy methods of abstracting heat from air, water, and earth will, by and by, render it as easy to produce the latter, as it is now to construct the former. The idea, at least, is in perfect accordance with the progress of improvement; which consists, first, in creating enjoyments of

* A plan and description of the above conservatory will, we hope, soon appear in this Magazine, with the approbation of His Excellency the Duke of Northumberland; and the same plan, including all the details of the stove apparatus, will also appear on a large scale in an early Part of *Illustrations of Landscape-Gardening and Garden Architecture*.

different kinds in different countries, according to the rude materials afforded in them by nature ; and next in equalising enjoyments, by bringing those of different countries to bear on the indigenous enjoyments of any one and of every country. The progress which has been made towards this result is greater than may at first sight appear. In two or three spots on the globe, industry has obtained the richest fruits from crabs, sloes, and other wildings ; and these have been distributed wherever man is civilised. The most useful grains and edible roots may be said to be in universal cultivation. The orange and the pine-apple are eaten in every capital in the world ; wine, ice, sugar, tea, and coffee are also common every where. The enlightened application of the power of steam will in a very few years equalise, all over the globe, every human enjoyment which is portable ; and man will then visit man in every clime, with greater ease and comfort than, a century ago, he could have taken a journey of fifty miles in the most civilised country in Europe. The tendency of every thing in human affairs is to advance, and, in advancing, to approach nearer and nearer to a level. This level will never be attained ; because, like still water, it would be inconsistent with that motion and progress which belong to the constitution of human society ; but, nevertheless, it is nature's *beau idéal*. All possible enjoyments will never be common to all ; but to all they will be open, according to their different capacities for attaining them.

The Boulevards, outer and inner, as public promenades, may be included under our present division of the subject. They act to a great city like breathing zones (Vol. V. p. 686.) and, as promenades, are great sources of enjoyment. The trees consist almost entirely of the small-leaved elm : a great many of them were, during the July Revolution, cut down ; and, we doubt not, others will be planted in their stead about the time when this Magazine reaches Paris.

We cannot help earnestly wishing that they may be planted in a manner suitable to the progress of the age ; and that, instead of monotonous lines of elms, there may be a representative system of all the vigorous-growing timber trees which would flourish in the open air in the latitude of Paris. On looking over the “ Diagram for the Composition of Arboretums in Lines along the Margins of Walks,” in our *Illustrations of Landscape-Gardening*, Part I. Plate 2., we find that the number of these, exclusively of the pine and fir tribes (which tribes we do not think would find, under the streets of Paris, a suitable medium for their surface-growing and wide-spreading roots), amounts to nearly 300 species and varieties.

Of Messrs. Loddiges's specimens of all of these we have lately had portraits taken for our forthcoming *Arborètum Británnicum*: none of them are under 15 ft. high, and few of them above 30 ft.; the ultimate heights they will attain are from 30 ft. to 100. If Messrs. Loddiges would part with these trees, they would be exactly, both as species and individuals, what would suit the Boulevards. We would plant three of each species adjoining each other; and we would place a label on one of them, with its name, native country, year of planting, and the other usual scientific and popular particulars. The general forms of these trees at all seasons; their ramifications and spray in winter; their budding, and the different tints of their foliage in spring; their different shades of green during summer; and their powerfully marked autumnal hues, would delight the Parisians and spread a general taste throughout France for exotic trees. There are about 150 hardy climbers, exclusively of climbing roses, which might run up the stems of the more hardy species; and all those trees whose autumnal tints were not conspicuously beautiful, might be enlivened by the deep purple red of the *Ampelópsis quinquefòlia*, or the claret grape.

The success of trees planted in such a situation as that of the Boulevards, the species being properly chosen, depends almost entirely on the quality of the soil, its quantity, distribution as to depth and to the supply of moisture, and more especially on guarding against the evils of superincumbent pressure. The last point is by far the most difficult to manage. The pressure under the carriage pavement we shall not attempt to get rid of; because, if the pressure on the footway be properly provided against, a stratum under it of proper soil, 3 or 4 ft. in depth, will insure the vigorous growth of the trees till they attain a mature size, and strength sufficient to force their roots into the surrounding strata. The modes of lessening the superincumbent pressure on the soil under the footway are three:—First, by vaulting; filling the vaults with the proper soil, preserving vertical and lateral communications for the introduction of water from the gutter between the pathway and the roadway, and forming a footpath of gravel, or other suitable material, over the vaults. Secondly, by building up piers from the bottom of the stratum of prepared soil to the surface, and on these piers resting flag-stones to form the footpath; provision for the entrance of water being made as before, along the side next the roadway. Thirdly, by mixing the prepared soil with chips of wood and fragments of compressed manure, which will decay and leave interstices for the roots; and with gravel and the rubbish of old buildings, in

vertical or oblique strata, which will keep the soil open for the free reception of water, and thus assist the roots in penetrating the soil, in this case unavoidably more compressed than in the two others. Over this last preparation the footway may be formed of flag-stones, causewayed, or laid with gravel or any other suitable material. When the roots of trees must unavoidably depend for their nourishment on a prepared stratum, laid under a Macadamised or causewayed street, the last mode of preparation is the most suitable for general adoption; and, indeed, it is that which will answer perfectly well for footways unless in extraordinary cases.

The Champs Elysées, and the Parisian Guinguettes or Tea-Gardens. Having paid little attention to these public promenades and places of amusement ourselves, we prefer giving what has been furnished to us by a coadjutor who has lived in Paris several years, and has seen them at various seasons.

The Champs Elysées is rather a wood, than either gardens or fields, as its name might seem to import; and it partakes of the mingled characteristics of our Hyde Park and Kensington Gardens. It is invaluable to the Parisians, not only as affording scope for walking and riding, but also as being a general place of public resort like the Boulevards, where the people can enjoy the gaiety of the scene around them, or amuse themselves by chatting with their friends, while sitting on movable wooden chairs, which they hire for about a half-penny each. It is reckoned fashionable to employ as many of these chairs as possible; and it is curious to observe the ingenuity with which a Parisian dandy contrives to occupy four or five. He sits upon one, rests his feet upon another, his hat is placed upon a third, and his two arms are supported by the fourth and fifth. Of course a sous is paid for each chair; and the gentility of a Parisian beau may thus be established for the trifling sum of twopence English, which is about the difference of the price between the accommodation which he does and that which he does not want. Ridiculous as this may seem, it is but an example, on a small scale, of the feelings created by the present state of society; for the chief distinction between a very rich man and one in moderate circumstances is, that the former has it in his power to purchase useless luxuries, while the latter is obliged to confine himself to such things as he really wants. The graver portion of the male loungers in the Champs Elysées read the newspapers, which are supplied at the moderate charge of a sous each, by persons stationed there for that purpose; and the ladies seat themselves in little groups, criticising the dress of the passers by, or listening to their attending beaux. Taken altogether,

the scene is uncommonly lively and brilliant : the ladies sitting under the trees are generally gaily dressed, with all those varieties of colour and redundancy of ornaments which usually characterise the Parisian belles ; the centre road is filled with equestrians and carriages ; and a number of flower-girls, and itinerant venders of *eau de groseille* (currant water) and the thin wafer-like cakes called *les plaisirs des dames*, are walking up and down, endeavouring to sell their respective wares, and dividing the public attention with intelligent dogs and monkeys, and various musical performers, some of whom are really very far beyond mediocrity. The great avenue of the Champs Elysées is very fine, being terminated at one end by the Barrière de Neuilly, sometimes called the Barrière de l'Etoile, a grand triumphal arch, which has a magnificent effect when seen at a distance ; and on the other by the Place Louis Quinze, with its four pedestals, surmounted by fine statues of horses, beyond which are seen the palace and gardens of the Tuilleries.

The Champs Elysées was always the principal scene of the festivities which took place under the reign of the elder branch of the Bourbons on all great occasions of national rejoicings. The most remarkable of these were those celebrated on the birthdays of the kings Louis XVIII. and Charles X. ; on which occasions the Champs Elysées used to resemble a great fair, with swings, roundabouts, rocking ships, conjurers, and puppet-shows, calculated, as we should suppose in England, only to amuse children. The most striking feature of these days of festivity was, however, the distribution of sausages, bread, and wine to the populace, by the royal family in person. For this purpose booths were erected, in which the different members of the royal family and the nobles of the court were assembled, to throw the sausages (they being first carefully wrapped in paper, to prevent them from soiling the gloves of the ladies) and pieces of bread to the people, who scrambled for them like dogs fighting for a bone ; the chief amusement of the august personages present being derived from the struggles and awkward efforts of the candidates, each trying to get as much as possible for himself. The wine (the common red Bourdeaux) was distributed by proper attendants, from large barrels placed in front of the booths ; and the people, from their frequent falls and tumbles over one another, to get each a fitting share, became soon besmeared with it : and this, joined to the grease and dust they had acquired by their struggles for the sausages, made them look more like demons than men, and occasioned frequent bursts of laughter

from the royal booths. Perhaps one cause of the fatal contempt in which Charles seems to have held his subjects, may have arisen from the repetition of these brutalising scenes; as, from the general seclusion of his habits, he saw but little of any other portion of the Parisians than these *polissons*, who may be considered the very lowest dregs of the people: and persons are generally apt to draw deductions solely from what they see, forgetting how wrong it is to judge of a whole from detached parts. It is thus very possible that the ideas which Charles acquired of the working classes in France, from the annual disgusting exhibitions of the Champs Elysées, should, together with the influence exercised over him by the priests, have led to his extraordinary infatuation. That the Catholic priests should wish to keep the people in slavery is not surprising, because freedom of opinion in politics might be naturally expected to lead to freedom of opinion in religion; and that Charles's bigoted notions should have made him easily yield to their wishes is also not to be wondered at: but, had he not been deceived in his ideas of the real character of the people over whom he ruled, he would not have dared to attempt to treat them as he did. Happily the days of ignorance and slavery are both rapidly passing from the earth; and the time is coming when kings will find it necessary to study the dispositions and inclinations of their subjects, and when their subjects will have become so virtuous and enlightened as to be well worthy of such consideration.

Tivoli is the most fashionable and best frequented of the public gardens of festivity in Paris, and may be called the Parisian Vauxhall. It is, however, very inferior to the Vauxhall of London, both in extent and variety. The principal attraction used formerly to be the *Montagnes Russes*; the amusement of which consisted in sliding in a car down an inclined plane with great velocity. The other diversions include bands of music, minor theatres, puppet-shows, and charlatans, the evenings generally concluding with a display of magnificent fireworks. The company are accommodated with ices and other refreshments, of which they partake sitting in alcoves, or on chairs among the trees.

The Gardens of Beaujeu, and others of similar description to *Tivoli*, differ so slightly as to seem undeserving of particular description.

The Guinguettes are public gardens of festivity for the lower orders: they are chiefly in or near the Fauxbourgs St. Antoine and St. Denis, and on the Mont Rouge side of Paris. They are, generally, neatly kept gardens, with little cabinets, or alcoves, within thickets of young elms. These alcoves are

usually complete bowers cut in the trees, the leaves forming the only covering; and the people, while taking refreshments, sit at little tables placed in each, as in tea-gardens of an inferior description in England. Over the open entrances to the alcoves are stretched wires, from which are suspended the numbers of the different tables; and behind the whole is generally a saloon appropriated to dancing, in which is a very tolerable band of music.

The Salles de Mars and de Flore, in the Champs Elysées, are also dancing rooms, with bands of music, for the lower orders; the visitors being generally inferior servants, laundresses, flower girls, common soldiers, &c. The decorum and excellent order preserved in these places are truly astonishing; as is the air of refinement which pervades the whole. Very little wine is drunk, but ices and cakes are taken abundantly; and the girls, with large baskets of bouquets of flowers, who stand in different parts of the saloon, seem to find a ready market for their nosegays. The saloons are circular, and the place for dancing is surrounded by pillars, which support the roof; the space between the walls and the pillars being occupied by lookers-on. The gardens belonging to these saloons are laid out like those belonging to the guinguettes on the other side of Paris. — *J. W. L.*

(*To be continued.*)

ART. II. *Description of Harewood House, and its Gardens and Grounds.* By OTTOW.

HAREWOOD HOUSE is nearly a mile from the beautiful village of that name, and is a noble specimen of architecture, of the Corinthian order. On the wings of the building of the north or carriage front are four beautiful medallions, representing Liberty, Britannia, Agriculture, and Commerce. The rooms are universally admired for the taste and splendour of their decorations; the entrance hall is spacious and noble; the panels on the walls adorned with trophies of war; and in niches are beautiful bronzed statues of Euterpe, Minerva, Iris, Flora, &c. The library is a very splendid room; the coved ceiling is highly ornamental, and very rich; it is supported by pilasters with Corinthian capitals: there is an excellent collection of books, well arranged, and busts of Newton, Machiavel, Dante, Petrarch, &c. The saloon is most elegant; the furniture green and gold. The chimney-piece, of white marble, by Vanguelder, is exquisite; over this, admirably executed in

bronze, is a representation of some drunken and heathenish rite, the subject of which, as I did not care to remember, escaped me before I was out of the mansion. A fine portico, at the south front of the house, communicates with this room. The gallery extends across the west end of the house, and is 77 ft. long. The French plate looking-glasses are immense. The superb chimney-piece, supported by two bewitching figures of nymphs, is a *chef d'œuvre*. The chandeliers, tripods, busts, &c., are all in the first style of excellence. The ceiling is of stucco work, and adorned with subjects from that endless labyrinth of fiction the Heathen mythology, admirably painted by Rebecca. The music room is very handsome; the ceiling is divided into compartments by cornices elegantly carved, and the floor is covered with a rich carpet to correspond with it. The white drawing-room, the yellow drawing-room, the couch-room, the dining-room, and others, are all splendour and elegance. The best staircase is admirable; the walls decorated with paintings of the Birth of Venus, the Triumph of Bacchus, &c. It struck me as singular that scenes of drunkenness should so frequently be depicted on the walls of this mansion, to the exclusion of historical pictures, of which there are none of any note. The muniment (archive) room on the ground floor, the kitchens, still-rooms, &c., are all complete in their kind. Water is conveyed to the house by upwards of 2500 yards of lead pipes, from a spring sufficiently high to raise it to the most lofty rooms of the building.

The park is finely wooded, and contains about 1800 acres. The pleasure-grounds were laid out by the celebrated Launcelot Brown, Esq. (or, as he was in his lifetime often called, "Capability * Brown"), and have subsequently been altered and improved by Repton, and other eminent artists in landscape-gardening.† They are now considered to rank among the first in England; and indeed their variety and grandeur are very striking, especially when it is considered that, unlike Hafod, Dunkeld, and Mount Edgecumbe, nature has done little to add to their beauty.

The kitchen and fruit gardens are of an irregular form, and contain about 8 acres: they lie on a very gentle slope towards

* Some persons say that this *prænomen* arose from a frequent remark of Brown's, when viewing any grounds which he thought might be improved, that "the place had its capabilities:" others consider the term as a title complimentary of his superior talents in his profession.

† In the first Lord Harewood's time, R. A. Salisbury, Esq. (who then resided at Chapel Allerton, where he had an immense green-house), was a frequent guest at His Lordship's table, and many important alterations are said to have been made in the grounds from his designs.

the south, and are sheltered from the north by a large wood of fine oaks, beeches, &c. The walls (brick) which surround them are 15 ft. high. There is a very fine cross wall, with aspect south by east, appropriated entirely to peaches and nectarines; the crop of fruit in some seasons is immense: at present some of the trees seem to be stunted in their growth, and want renewing. A very large and beautiful mulberry tree, trained within the very obtuse angle of a wall with the greatest symmetry, bears abundant crops of fruit. The range of forcing pits, for asparagus and culinary fruits, as cucumbers, capsicums, &c. is very commodious, and on a very extensive scale.

The forcing department for fruit consists of a vinery, with the glass-work at a very great angle; the forcing commencing when the sun's meridian altitude is at the lowest. The vines are, of course, trained to light open trellising, a little detached from the wall and flues. Adjoining, in the same range, is another vinery for the latest crop of grapes, to succeed the general crop in the pine-houses. There are four considerable houses for the forcing of peaches, nectarines, and figs: the trees introduced are both trained and standards; the latter are in very large pots, and are exceedingly fruitful. Slight hotbeds of decayed leaves are made in the front of the houses, on which the pots are placed. Abundance of fine mushrooms are grown on the beds. The "old stove," as it is called, a large house, exhibits a fine assemblage of pines, of the best varieties. A muscat grape fills all the rafters in the house, and bears abundantly; the bunches, thinned to six or seven on each rafter, very large and well grown. In this stove are many rare plants: the plantain (*Musa sapiéntum*), allspice (*Piménta officinális*), silk cotton tree (*Bómbax heptaphýllum*), striped-leaved arrow root* (*Maránta zebrína*, or *Caláthea zebrína* of *Loudon's Hort. Brit.*), and other tropical plants, are cultivated with great success. The limodורים (*Tankervíllæ* and *hyacínthium*), very large and strong plants. *Gloriosa supérba*, very rampant, with the largest flowers I have ever seen. *Nèrium*

* Perhaps I may be pardoned for here mentioning that of the beautiful order Scitamíneæ the stoves of John Smith, Esq., of Hungate, in the city of York, afford many fine specimens, grown and managed in a superior manner. Mr. Smith is *entirely blind*; he is, nevertheless, an ardent admirer of plants, and an assiduous collector, which may be thought a singular pursuit for a person under so pitiable a bereavement. The precision and quickness of his touch in recognising plants in other collections than his own, are altogether surprising; and his knowledge of botany and floriculture is no less gratifying to the gardener or amateur, than his urbanity and kindness in showing his collection of rarities. I regret to hear that Mr. Smith's health is seriously impaired, attributed to his unceasing attention to his favourite pursuit in his stoves and green-house.

spléndens, very tall and graceful plants, with amazing clusters of flowers. The “new stove” is 100 ft. long, 30 ft. broad, and 15 ft. high. It is used principally as a pine-house, but has, moreover, abundance of grapes. There are in it two very fine plants of the granadilla (*Passiflora quadrangulàris*), which for a long period have annually ripened in the greatest perfection plenty of well grown fruit.* In this house I observed a number of pots of the *Trevirana coccínea*, of very fine growth, and covered with the greatest profusion of flowers. There is only one plant in a pot, by which mode of culture they are grown more strong and bushy than when several stems are suffered to rise; they seem to have much heat given them, being placed near the back flue. The “Calcutta house,” built purposely for pines, is 80 ft. long, the back wall little more than 8 ft. high, the lights at a very small horizontal angle, and nothing trained within the sashes; so that the summer’s sun has greater effect on the temperature of the house than where the inclination of the glass is greater, and the light and heat of its rays obstructed by the foliage of vines. The pines in this house are of the finest growth and beauty. The conservatory is but small; it contains a very fine and wide-spreading heliotrope (*Heliotropium peruvianum*) trained to a trellis, choice varieties of *Ipomœa*, *Ixia*, and other herbaceous plants. The green-house is a very light, airy, and handsome structure, upwards of 70 ft. long, well stocked with the best pelargoniums, orange and lemon trees, Australian and Cape plants; several fine varieties of *Alstroemèria*, capitally grown, larger and more luxuriant than any I have seen; a fine collection of cockscombs of the greatest

* In the *Hort. Trans.* may be found a paper on the cultivation of this fruit, which was written by Mr. Robert Chapman, who was then the able and intelligent gardener at Harewood. Mr. Chapman is a native of Scotland, and, I believe, in early life worked under Aiton; he was upwards of forty years in the only situation as head-gardener which he ever held: a more upright and industrious man never entered His Lordship’s service. In the rigours of winter, the heats of summer, early or late, call when you might at the gardens, there was this sedulous man to be found, always at some employment: neat, clean, and respectable in his person and dress; affable and cheerful in his demeanour. He retired from Lord Harewood’s service about three years ago, and now lives, as he ought, in comfortable retirement, free from all fears of the “*res angusta domi*” [poverty], having received from the hands of his noble master a handsome piece of plate, of the value of 50/., as a token of the respect and estimation in which he was held, as a skilful, industrious, and upright servant; a memento, certainly, not the less honourable for Mr. Chapman to have deserved, than for His Lordship to bestow. There are, in many parts of England, nurserymen and gentlemen’s gardeners who have had the advantage of Mr. Chapman’s instructions, and the benefit of his example; and who, if this note should fall under the observation of any of them, will be pleased to hear of the honourable exit from their fraternity of an intelligent and honest man.

beauty, and surprisingly uniform in height and size. The tree carnation, trained upon little trellised poles, 7 to 8 ft. high, is very ornamental, and has a fine appearance. There is a small shrub, of straggling growth, in a shallow rectangular pot of white and blue porcelain, supposed to be some variety of tea, but, as it has never flowered, its species has not been ascertained; it is said to have been in its present domicile from 20 to 30 years: the leaves appear much like those of the poplar-leaved birch (*Bétula populifolia*). At the entrance of the gardens there is a neat and commodious building, with apartments for the foremen; and business, seed, and fruit rooms. The number of gardeners and assistants averages 15 or 16: they have constant wages, being employed in severe weather in the winter season (when out-door operations are impeded) in making nets for wall trees, grinding tools, making brooms for sweeping lawns and walks, cleaning and sponging the leaves of hot-house plants, &c. There are two spacious flower-gardens adjoining the mansion, one at each end. That to the east is very much shaded by large trees; the rosariums in it are very beautiful and well managed, and there are some admirable weeping ashes: also a small conservatory, with a few ornamental plants, chairs and seats, &c. and delightful arbours and summer houses. The new flower-garden to the west of the house is, I think, capable of much improvement in the arrangement of its walks, flower clumps, &c., not being commensurate with the magnificence of the house and other parts of the grounds. It was, I believe, laid out about 12 years ago by a country nurseryman, whose experience in landscape-gardening I should think has been very limited, or his knowledge and taste very defective; there are, however, abundance of fine herbaceous plants, and many luxuriant exotic shrubs, a fountain, &c.

The whole of the gardens, pleasure-grounds, and park are kept in the highest order. The name of the present gardener, I believe, is Laurel, a very well educated and highly respectable man, and, it is needless to add, master of his profession.

Yorkshire, Oct. 7. 1830.

ONTΩΣ.

ART. III. *A few Observations made on visiting several Public and Private Gardens, &c., in England and Scotland, during the Summer of 1830.* By Mr. W. SAUNDERS.

FROGNALS, the seat of Lord Sidney, near Bromley, Kent; June 9.—A place much noted for growing superior crops of

figs, chiefly a white fig, known in Mr. Lee's nursery as the "White Sidney Fig," and introduced some years ago by a member of that noble family. It is an exceedingly rich juicy fruit. The fig trees are planted against the walls, at about the distance of 12 ft.; the border is entirely appropriated to them, across which they are trained, in the manner of espaliers, at the distance of 5 or 6 ft., at the same time keeping the wall full of branches to preserve the young fruit and branches from frost. The trees are carefully covered at the approach of winter, and not uncovered until the beginning or middle of April. By preserving the young fruit, Mr. Moffat is enabled to gather the crop earlier, and to continue doing so equally late with an abundant supply; he has also a certainty, even in the worst seasons, of having ripe figs. I conceive it to be a practice well worth the attention of the gardening world, and more particularly when the state of fig trees in general this season (from the effects of last severe winter) is contrasted with those at Frognals. I observed a very fine plant of the *Eccremocarpus scaber* at the end of an orange house in full flower, which had stood there during the winter; also a *Magnolia grandiflora*, 30 ft. high, against the front of the mansion. It had suffered considerably from the severity of the weather.

Mr. Moffat has erected a range of excellent pits, the walls of which are built of layers of turf, each layer well beaten down, and pegs, at intervals, are driven through the turf to consolidate the whole. When the walls are raised to a convenient height, a slight frame is put on for the reception of the light. They are only used for the preservation of half-hardy plants during the winter months, and with a slight covering they effectually exclude the frost.

There was a good crop of wall fruit, which Mr. Moffat believed he had preserved by applying cold water to the trees before sun-rise on the mornings of the 1st, 2d, 3d, and 4th of April, during the severe frost which occurred at that period.

White Knights, near Reading; June 21.—Once so famous amongst gardens, and still rich in splendid specimens of the American family. The conservatories are stripped of their most valuable tenants, and are now fast falling to decay. The present stock contains chiefly young plants, of which there is a good collection, and many of the newer varieties: they form the main prop by which the garden is upheld. The fine wall of *Magnolia grandiflora* has suffered considerably by the frosts. There are some remarkably fine specimens of *Magnolia glauca*, *conspicua*, *acuminata*, *tripétala*, and *macrophylla*, as standards, studded thickly throughout the grounds, and many of them

from 12 to 15 ft. high. I observed several plants of *Kálmia latifolia*, one of them measuring 9 yds. in circumference, of an elegant colour, and many shades darker than any I have hitherto seen, although standing in equally good places; they were quite ten days later in coming into flower than the common sort. There were many magnificent specimens of rhododendrons, but the flowers had vanished. On the lawn in front of the conservatories are two uncommonly shaped Irish yews; they are at least 12 ft. high, of a close conical figure. The place was in good order, considering the limited means Mr. Jones has in his power; it envelopes the mind in a gloomy sensation to see summer-houses, fountains, and extensive covered walks, going so fast to ruin for want of that main-spring of all human works, money.

The same day I called at *Englefield House*, the seat of Benyon de Bouverie, Esq. A neat well-kept place, surrounded by fine young plantations. The garden walls are well stocked with healthy trees. There is a good collection of stove and green-house plants growing luxuriantly, and pines and grapes in the same houses, both doing extremely well. The houses are heated by flues. A piece of ground was walled in last autumn as an orchard, for the choicer sorts of standard fruit trees; several of the trees, particularly pear standards, from 12 to 14 ft. high, were moved this spring, and are now covered with an excellent crop, showing no symptoms of having received the least check. Such a spot of ground would be a desirable appendage to most places, as affording at once shelter from severe weather, and an opportunity of growing many of the coarser sorts of vegetables; while it would release the kitchen-garden (too often overburdened) from a part of its discipline, and would also give the chance to the gardener of keeping it more neatly. Mr. Greenshiel's out-of-door melons now fill the glasses, and look very promising. Notwithstanding the unfavourable season of last year he ripened a great number, although not so fine as in some former years. His method of growing them is to be found in Vol. III. p. 182. of this Magazine.

Wasing Hall, Aldermaston, the seat of W. Mount, Esq.; June 22.—The mansion is delightfully situated on an eminence, commanding a view of the surrounding country; and a fine plantation of American plants, including some remarkably fine rhododendrons, partly encircles the house. There is a very superior collection of both stove and green-house plants, particularly ericas, which were in such a state of high cultivation that they could not fail to attract attention. There are some

good plants of *Clèthra arborea* and *Datura arborea* in the conservatory, nearly 16 ft. high ; also *Ficus elástica* and *prostrata*, *Mýrtus pimentöides*, &c. Mr. Wiggins seems very successful in his management of *Elichrysum* ; having a number of fine plants, he seldom fails in striking every cutting put in. His method is simply this : — Having selected the young shoots, which he slips off the stem or branch of the mother plant, he inserts them into a pot which has been previously filled to the brim with a mixture of sand and good heath mould, in the proportion of two thirds of sand to one third of heath mould, at the same time putting plenty of drainage into them. He then places the pot in the front of any of his houses where a moderate heat is kept up, watering rather sparingly. The knife is not used, nor are they covered with a glass. This method is applicable to many plants that are tenacious of damp.

WILLIAM SAUNDERS.

ART. IV. *Historical Account of a Method of making Bass for binding Plants, &c.* By M. P. LINDEGAARD. Translated from the Danish by M. JENS P. PETERSEN, of the Royal Gardens at Rosenburgh, Copenhagen.

ACCIDENTS sometimes will occur during the lives of men, which are often the causes of the discovery of many useful, and even important inventions. Some years ago I cut the branches of several lime trees (*Tilia europæa*) growing along the margin of a narrow piece of water, into which parts of these branches fell. Shortly afterwards the frost happened to set in, and the branches remained in the water below the ice till the spring following, when the ditch or piece of water was cleaned, and the branches taken up and thrown on a heap along with some other faggots or spray. Some time after this, when the weather had become milder, I passed by this heap, and observed the bass to separate easily from the alburnum ; and as I could draw it off in long strips, and found it very strong, I concluded it would answer the same purpose as bass of Russian mats, and be tougher when properly prepared. This happened during the time of war, when trade and navigation languished, and consequently bass, as well as every thing else, was at a high price. I took advantage of this opportunity ; and whenever I had cut the lateral branches of lime trees, all the smooth branches were collected, and, in the beginning of the ensuing April, put into a ditch or piece of water, and something weighty put over them to keep them below the sur-

face of the water. Towards Midsummer the branches were taken up, when the bark loosened perfectly from the alburnum, and was immediately pulled off and washed in clean water, to make the glutinous matter separate from the bass. Afterwards it was hung up and dried.

To gardeners resident in the country where the lime tree abounds, and at a great distance from large towns, this method of making bass will be found of great importance.

Branches of even an inch in diameter are useful for this purpose, but, of course, large branches and stems afford more layers of bass.

ART. V. *Description of a Cottage in England, and a Mud Cabin in Ireland.* By Mr. JOHN HOWDEN, heretofore AGRONOME.

Sir,

YOUR very tempting offer of an *Encyclopædia* for an essay on the cottage system, induces me to attempt an article on that subject; and, though I have a most excellent library, worth some scores of pounds, I prize no volumes so much as yours: yet I greatly fear that I can write very little worthy of a stereotype edition on any subject. Providence seems to have designed that I should never be an author: you have seen some of my attempts; but none are fit to be read twice over, much less to be translated into different languages, and every *good* work ought to bear that test.

I do not pretend to agree with you on every subject, yet I never read the productions of an author or editor with whom I coincided in so many things. I do not agree with you in the cottage system to its full extent. I am a cottager myself, at least I live in a cottage or lodge, and such a cottage as seldom falls to the lot of a poor man: it is not, as Oliver Goldsmith describes,

“ A chair-lumber’d closet just twelve feet by nine ;”

but thirty feet by twenty-one, exclusive of kitchen and wash-house, fifteen feet by fifteen feet. My house and parlour are entered by two distinct doors from a porch in front, and each has a distinct backdoor; so that, if bumbailiffs or other intrusive visitors should come upon me, I have always a *backdoor* to creep out at. I have a small cellar under each staircase: the one under the parlour is calculated to hold two hogsheads of ale and two barrels of beer, with shelves and recesses for a few bottles of cowslip, currant, and other wines, for a friend or so; that under the house is chiefly used as a pantry, and

for a cart-load of potatoes. From the floor to the ceiling of the house and parlour is a height of 8 ft. 6 in., and that of the chamber 7 ft. : the whole is built of freestone ashlar, with a pavilion-slatted roof. I have been thus particular in describing my own cottage; for, as the saying is, what is nearest the heart is nearest the mouth, and, of course, nearest the pen. I am particularly fond of my cottage, because I think it the most beautiful and accommodating in the whole world. Nor are its inside ornaments less attractive. I have a Venus, five Dianas, and an Adonis, which excel any paintings that ever I saw. We have neither dog nor cat, cow nor pig, nor so much as a canary bird, to take up our attention for a moment. If such a cottage as this, such a home as this, is not worth fighting for, where must patriots come from? Now, I do not think that any poor man could, should, would, or ought to build such a cottage: but if gentlemen and noblemen would build such cottages for their servants, think of the comfort there would be in living in one of them; think what such a servant would do for such a master, or rather think what he would not do for such.

I shall now contrast my cottage with the thousands of cottages which I have seen in Ireland, in twelve different counties; and, first, to begin with the lowest. The first thing that an Irish peasant thinks of, when he comes to the age of puberty, is to get married. He is encouraged in this by his priest; partly to prevent the deadly sin of fornication, and partly because there is always a collection of money made by the friends of the parties, like the penny-weddings in Scotland: but, instead of giving the collection to the young couple, as in Scotland, it is, every farthing, given to the priest. I myself have given as much as a pound-note at a time, rather than appear shabby or singular. Well, Sir, you always see that, when birds begin to couple, they begin to think of building a nest; and so do the Irish peasantry. The young man begins to build his house on a piece of waste land, by the road-side. His first process is to work up a quantity of clay, as if he meant to make a quantity of bricks; he then lays the foundation of his cabin with this soft clay, about 9 ft. by 15 ft. long, about 1 ft. high, leaving a door-place near the centre, which is to serve as door, window, and chimney. As the clay gets dry and stiff, he adds another layer, just as the swallows do, till it is about 6 ft. high; he then begs, buys, or steals rails or poles, and lays them across it; he collects brushwood to raise the roof, and then covers the whole with turves or straw, or both, as he can get them. He then begs or steals straw sufficient to make a bed of; for, though he might beg chaff from his master, or his master's neighbour, he has got

no bedtick to put it in, and the straw is more easily kept within bounds: he has no bedstead, but a few turves or raised earth to keep the bed distinct from the rest of the floor.

His young wife is all this while living with her own parents or with his; but now, being "as ladies wish to be who love their lords," she is busy spinning blankets and coverlets; and she now goes home to her own new mansion to lie in. Her household furniture consists of a spinning-wheel, a stool or bench to sit on, a pot for boiling the potatoes, and a sort of table to eat them off. Of other furniture there is none that I remember, except a besom for washing the potatoes with. As soon as the potatoes are boiled they are carried to the door, the water is poured off from them, and they are then brought in and emptied upon the table. The pot is set down to receive the peelings as the potatoes are eaten; a neighbour who keeps a pig sends round and collects them, paying for them with whatever he abounds in: if a publican, the common price of potato-peelings is a pint of ale with a penny roll, every Saturday evening, for each potato-eater; if a farmer, the reward is generally a piece of ground to plant potatoes on.

In the course of time, if the man be industrious and healthy, he will muster up a pig of his own, to eat his own potato-skins, to graze in the lanes, and sleep with the children. By and by he begins to look up in the world, gets a nanny-goat, or may-be two tied together with a hayband; they graze in the lanes, and really give a great deal of milk. He rents a small corner of some field for a potato-garden, and formerly gave his vote for members of parliament. His children grow up to be men and women, come over to England, and make their fortune either by serving the bricklayers or enlisting for soldiers; in either of which capacities they are made men of, as the life of a private soldier is a king's life compared with their former state.

I dare say, Sir, you have observed the features of an Irish peasant of the lowest grade; the curl of his lips, and how he shows his teeth, something like the passion of fear, pain, or disgust, just as if he were walking in snow, or on sharp flints or thorns, with his naked feet; for how can he afford himself proper clothing on 4*d.* or 6*d.* per day? I had, when gardener to Lord Doneraile, where your correspondent Mr. Haycroft now is, I had, I say, ten men, four women, and four boys, all of whom I paid, on a Saturday night, with a two-pound note. I dare say their wages are not much altered yet.

I am, Sir, &c.

JOHN HOWDEN.

Heath House, near Cheadle, May 10. 1830.

ART. VI. *Four Designs for Labourers' Cottages.* By Mr. RICHARD VARDEN, Architectural Pupil with John Perry, Esq., Architect, Godalming.

Sir,

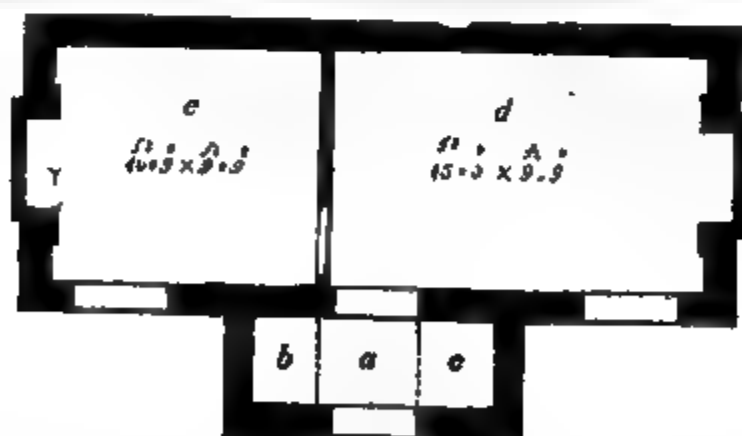
THE invitation you give to artists, in Vol. I. p. 354., to furnish you with designs of various kinds, has induced me to trouble you with a few sketches of cottages; although, as they are nearly the first attempt of a very young hand, I fear they may not be such as to be of any service to you. Should one among them be found worthy of a place in a Number of your Magazine, I should feel myself very highly honoured; and, if not, I trust you will excuse the liberty I have taken in laying them before you. Subjoining a few words in explanation of the sketches,

I remain, Sir, &c.

Godalming, Jan. 2. 1830.

RICHARD VARDEN.

119



No. 1. (*fig. 119.*), a cottage of the smallest description, containing a porch (*a*), tool-house (*b*), pantry (*c*), living-room (*d*), and bed-room (*e*), with a garret over the two latter apartments. The walls of this cottage should be built in 14-in.

rough stone-work, with square dressings, properly coped. The floor ought to be at least 9 in. above the level of the ground, the surface of which should be inclined, to carry the water off when being cleaned: the height of the room 8 ft. If possible, the front should be to the south-east: for, if the rooms receive their light from the north, they will always be cold, having a damp cheerless effect; if from the west, they will be heated to such a degree by the afternoon sun, as to make the sleeping-room scarcely habitable during the three summer months.

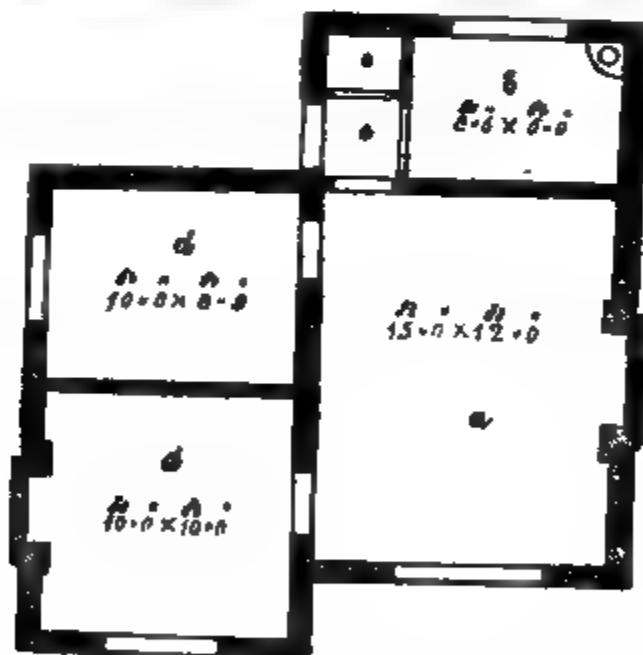
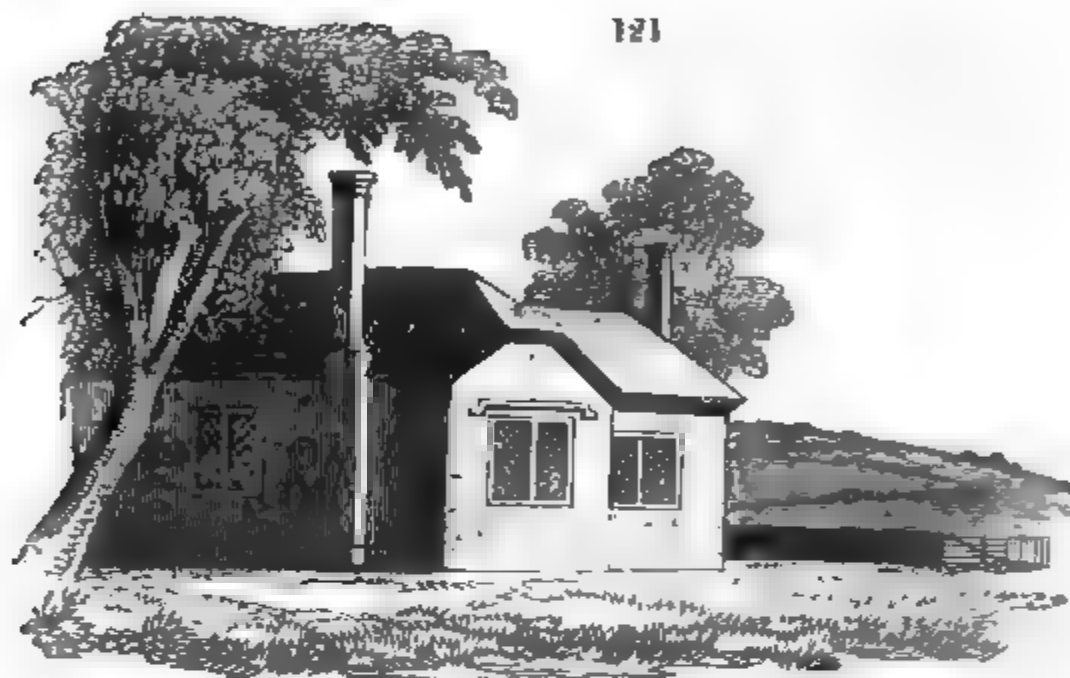
Cow-shed, pigsties, fuel-house, &c., are supposed to be at a convenient distance, and of a size suited to the habits and wants of the tenant.

120



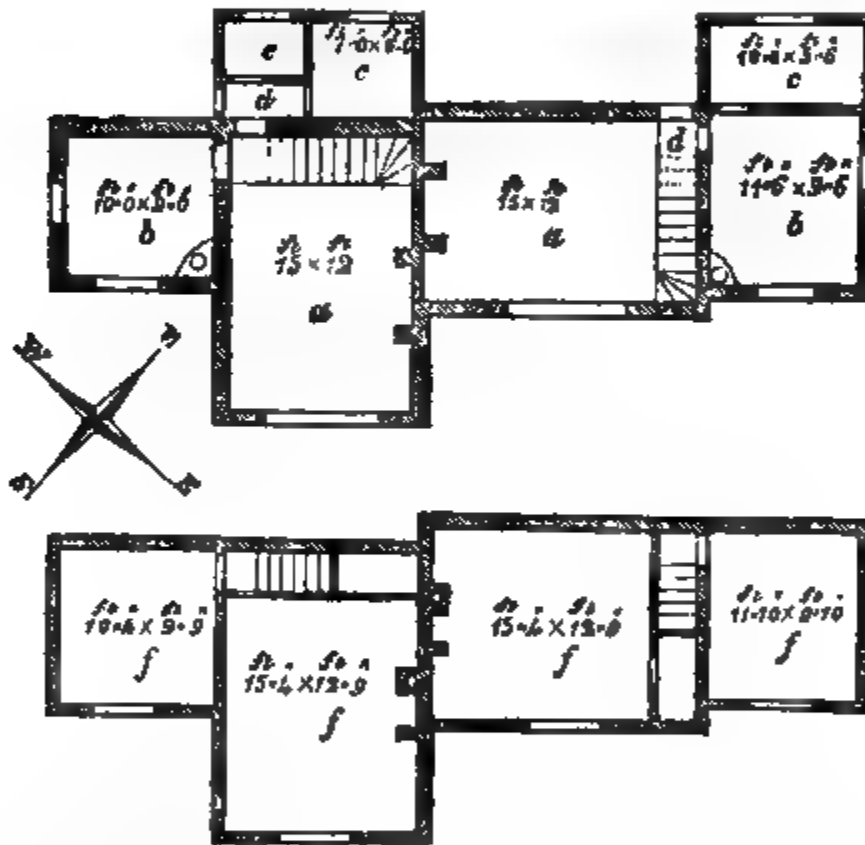
No. 2. (*fig. 120.*) contains a living-room (*a*), wash-house (*b*), lobby (*c*), sleeping-room (*d*), and pantry. (*e*) If another sleeping-room should be wanted, it may be added behind, or

by converting the wash-house into a bedroom, and the pantry and lobby into a wash-house, which should contain a copper, oven, &c. To be built with any materials that come handy, and coloured a good warm stone tint. The roof to be covered with old tiles, and the gables to have large boards, &c. Fuel-house and other outhouses to be placed according to the nature of the ground.



No. 3. (*fig. 121.*), a larger cottage, containing a kitchen (*a*), back-kitchen (*b*), lobby (*c*), two bedrooms (*d d*), and pantry (*e*). May be built of timber-framing plastered, of the Pisa walling, of stone, or whatever is cheapest in the neighbourhood. The roof thatched with reeds or straw. Pigsties, &c., detached.

122



No. 4. (*fig. 122.*), a double cottage, built with stone or brick, and thatched with reeds. They each contain three rooms on the ground-floor, and two above. Living-room (*a*), wash-house (*b*), pantry (*c*), porch (*d*), tool-shed (*e*), and bedrooms (*f**f*). The walls may be built hollow, of brickwork, in Silverlock's manner, as described in your *Encyclopædia of Gardening*, and also in this Magazine; or in brick in bed, 11 in. wide, with a vacuity between, as described in your own essay on Cottage Husbandry and Architecture, in the present Volume.

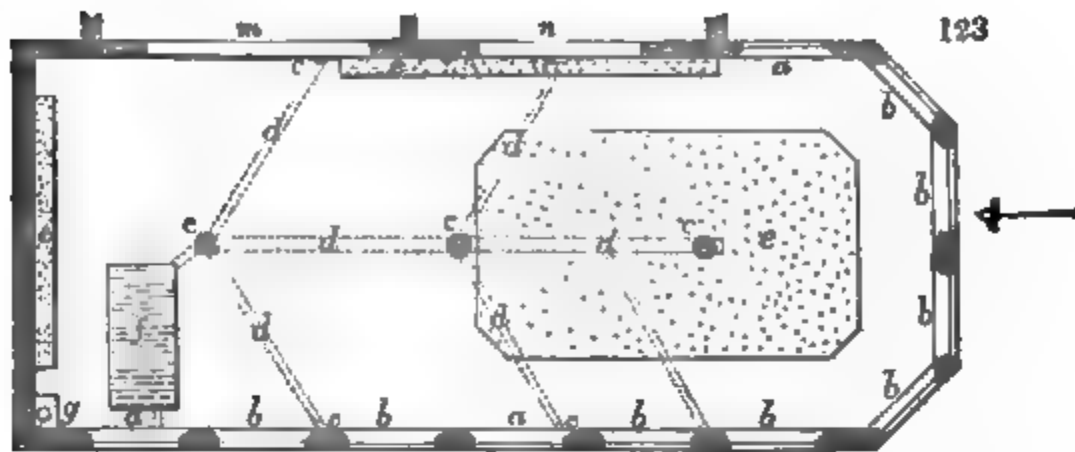
Cow-shed and out-buildings to be according to the wants of the occupiers.

ART. VII. *Design for a small Green-house or Conservatory.*
By T. T.

Sir,

THINKING it not improbable that the enclosed particulars of a small green-house, or conservatory, might furnish some hints to such of your readers as may be desirous of adding that agreeable appendage to their residences at a reasonable expense, I shall make no apologies for forwarding them to you. There are many who forego this luxury on account of the usual cost of buildings of this kind, when they are ornamental enough to be attached to a house, and also large enough to contain a sufficient variety of plants to look gay throughout the major part of the year. Having found the one, of which I now send you a sketch (*fig. 127.*), to answer the latter purpose, with merely the assistance of two or three common two-light frames, I do not hesitate to recommend something similar, where the power may be wanting to erect the costly and magnificent building given in Vol. II. p. 170. of your Magazine. My humble one is within the scope of most persons: it was built and fitted up entirely by a common bricklayer and carpenter from an adjoining small village, and cost between 250*l.* and 260*l.* I do not here include the expense of heating it, both because the new method by hot water has superseded mine, and because the cockle which heats it warms, through a separate main flue, the lower rooms, passages, staircase, and entrance of my residence. It answers, however, the double purpose extremely well, and as far as it creates a constant flow of pure air from without, by introducing it through a *large* flue, has that advantage over any plan which only heats the air already in the green-house. I may also observe, that there is an advantage attached to the present plan, which may be a recommendation to such as may be occupying houses for only a limited period: all the roof-lights, side-lights, and doors, consisting of movable frames; and the only expensive articles, which are the lead-gutters, lead-ridges, and cast-iron pillars, being still valuable when the house may be dismantled; the loss upon removal could not be great.

Fig. 123. is the ground plan, of which *a a a* are three doors, each dividing in the middle; and, being hung upon Collinge's patent hinges, they are lifted on and off with the greatest ease. The letters *b* are so many Gothic lights, resembling the doors. (*fig. 126.*) The letters *c* are cast-iron pipes, conducting the rain-water from the roof-gutters into the drains (*d d*), which carry it into the tank (*f*). The letters *e* are beds containing soil of the quality best suited to their respective plants. The



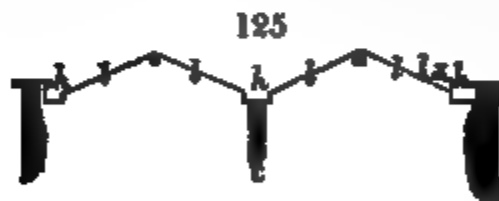
tank (*f*) is 12 ft. by 10, and $6\frac{1}{2}$ ft. deep, arched over, and covered with a movable flag-stone at the mouth, supplying the pump (*g*), through the bottom of whose trough the waste water is again returned into the tank. *m* is a glass door opening into a library, and *n* a similar door opening into the drawing-room.

Fig. 124. is a section of the main beam, 44 ft. long, extend-



ing through the centre of the building, and upon which the inner ribs and lights rest. The gutters, lined with lead (*h*), are cut out of the solid beam, and fall each way to the three hollow cast-iron pillars (*c c c*) standing over the centre drain.

Fig. 125. is a cross section of the roof, where *l l l l* are the



rafters, on which the lights rest, exactly after the same manner as those of the common cucumber frame, with the addition of a slip of wood, 5 in. wide, extending from the ridge to the

gutters along the rafters, to cover the outer wood-work of the lights, after they are returned to their places in September. Without this the rain water would find admission down the openings at the sides of the lights. This is essential to the dryness of the house; and if the two or three screws, with which they are fixed, are well greased, they are readily taken off from such lights as are removed for the summer. The three lead gutters (*h h h*) should be wide enough in the centre to admit of a person walking along it. *c* is one of the cast-iron pipes, a pillar 9 ft. long, supporting the beam, and having five small wooden shafts round it, to train climbing plants upon. The ventilating shutter (*l x*) works upon two pivots, and is raised by a wooden rod, which also props it open.

Fig. 126. is one of the upright lights, 6 ft. 8 in. to the spring of the arch, and rising 8 in. in the centre, fitting into a corresponding frame, and secured merely by three bolts (*k k k*). *j j* are two windows, 14 in. deep, opening upon horizontal pivots at their centre; the panes of the glass $4\frac{1}{2}$ by 4.

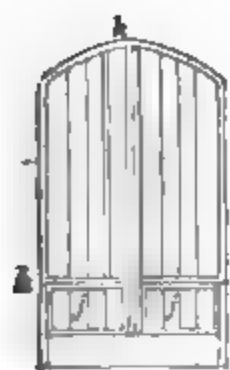


Fig. 127. is a slight sketch of the elevation, with the doors and lights removed for the summer; but not being done upon a scale it does not give the proportions, for the height of the parapet, including all the distance from the crown of the arches to the coping, is only 2 ft. 6 in., and the pillars



between them 23 in. wide, bevelled off to 10 inside. The glazing of the roof is curvilinear, each pane being only $5\frac{1}{2}$ in. by 4; the laps rather more than one eighth of an inch, with putty between, except a small opening at the centre; but where the best crown glass is used, and the panes so narrow, I do not conceive putty necessary, where merely the usual green-house temperature is wanted. Not only is the original cost, and the expense of repairs, most considerably reduced by adopting panes of small dimensions, but breakage from frost is completely prevented, when the laps do not exceed one fourth of an inch. Though my house is 43 ft. by 18, the cost of glazing did not amount to 50*l*.

If it should be desirable to have a bed or beds, ample directions are given in your Magazine (Vol. I. p. 108.), with this additional caution only, that where the substratum does not afford a ready escape for the water, drains should be made on the outside, and far below the foundation of the house all round; small openings being left in the foundation walls, to allow the water to pass freely from the bottom of the beds. Whilst speaking of those beds in which camellias usually find a place, I cannot help expressing a doubt whether it is not more advisable to have the plants in pots plunged in the soil, should

that situation be preferred, than to plant them in the bed itself, as they are apt to make a profusion of wood and but little blossom. Though the effect of the elevation sent you is much prettier than it appears upon paper, and corresponds with the character of my house, yet it might not accord so well with others of a different style, where the Grecian pilaster would suit better, and where long lintels being used over the door and windows, instead of stone or brick arches, would allow lower battlements and less masonry, so as to admit a greater quantity of light. Not that I altogether agree with you in upholding the necessity of that continuous light (if I may so express it) in a mere green-house, which you advocate so strongly in your different publications, believing that in the summer season many plants derive considerable relief from being at different intervals thrown into temporary shadow as the sun travels round. [We entirely concur in this opinion for the summer season, and for most plants merely ornamental.] I likewise doubt the advantage of having the plants in pots stationed upon stages, where they are usually crowded together, and drawn up into unsightly shapes. In my opinion they show to greater advantage when looked down upon, and the smaller plants may be brought nearer to the eye upon a light metal stand or two, placed where it may best suit. [In this also we entirely agree.] I shall, however, trespass upon you no further than merely to recommend a very liberal use of Read's patent syringe at all times of the year, except in damp weather, and especially for the oranges and camellias.

Should any of your readers wish for further information on any point, which I may be able to supply, it shall be readily given.

Notts, July 29. 1829.

T. T.

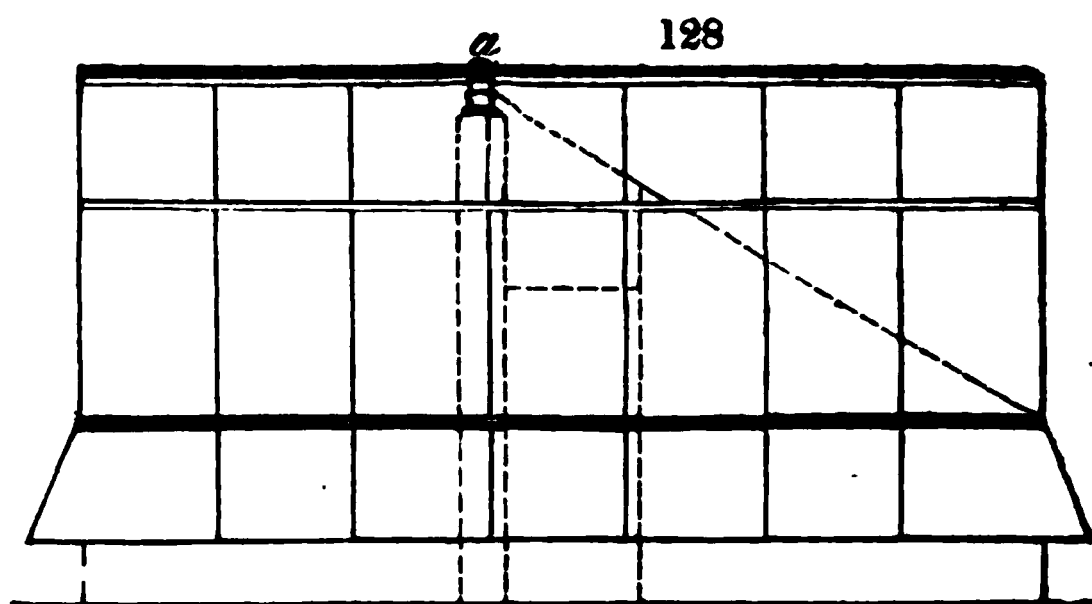
ART. VIII. *Notice of a small economical Green-house, built by Mr. William Godsall, Nurseryman, Hereford. Communicated by Mr. GODSALL.*

Sir,

I HEREWITH take the liberty of sending you a sketch of a small green-house which I had erected four years ago, having experienced its utility.

I have represented the section within the elevation by dotted lines, thereby occupying less of your valuable room should you think it worth a place in your Magazine. The front and end lights slope so as to form an angle of about 67 degrees,

which, by receiving the winter sun's rays at nearly right angles (if I may so express it), warms the atmosphere of the house considerably at that season when his animating influence should be made the most of; the sloping front and ends cause a very trifling additional expense, and in a house 20 ft. by 14 affords room for 300 pots 4 in. in diameter more than if those lights were upright; and under the projection outside is a snug winter repository for half-hardy plants, &c., plunged in tan; in short, where economy is a consideration, such a house will be found to answer the purpose admirably. Eight years ago I had also a green-house erected, the draught of the chimney of which was not sufficient to carry off the smoke, notwithstanding I had it raised and altered in various ways; and conceiving at last that height had little to do with it, I determined to try what virtue there was in garden pots. I had the chimney lowered considerably, took a pot about 14 in. in diameter, knocked the bottom out, and had it firmly cemented invertedly on the top, over which I put a second of a smaller size, and also a third. (*fig. 128. a*) The smoke then issued freely



from the top, occasioned by the current of air that passed upwards through the cavities between the pots, on account of their not being quite circular, irregular ones having been purposely selected. Indeed, it has answered the purpose extremely well ever since, and to gardeners it is a cheap and efficacious remedy always at hand: but, perhaps, they would have more confidence in trying the experiment, if I refer them to a much later though more scientific invention described in part li. of the *Mechanic's Magazine*.

I am, Sir, &c.

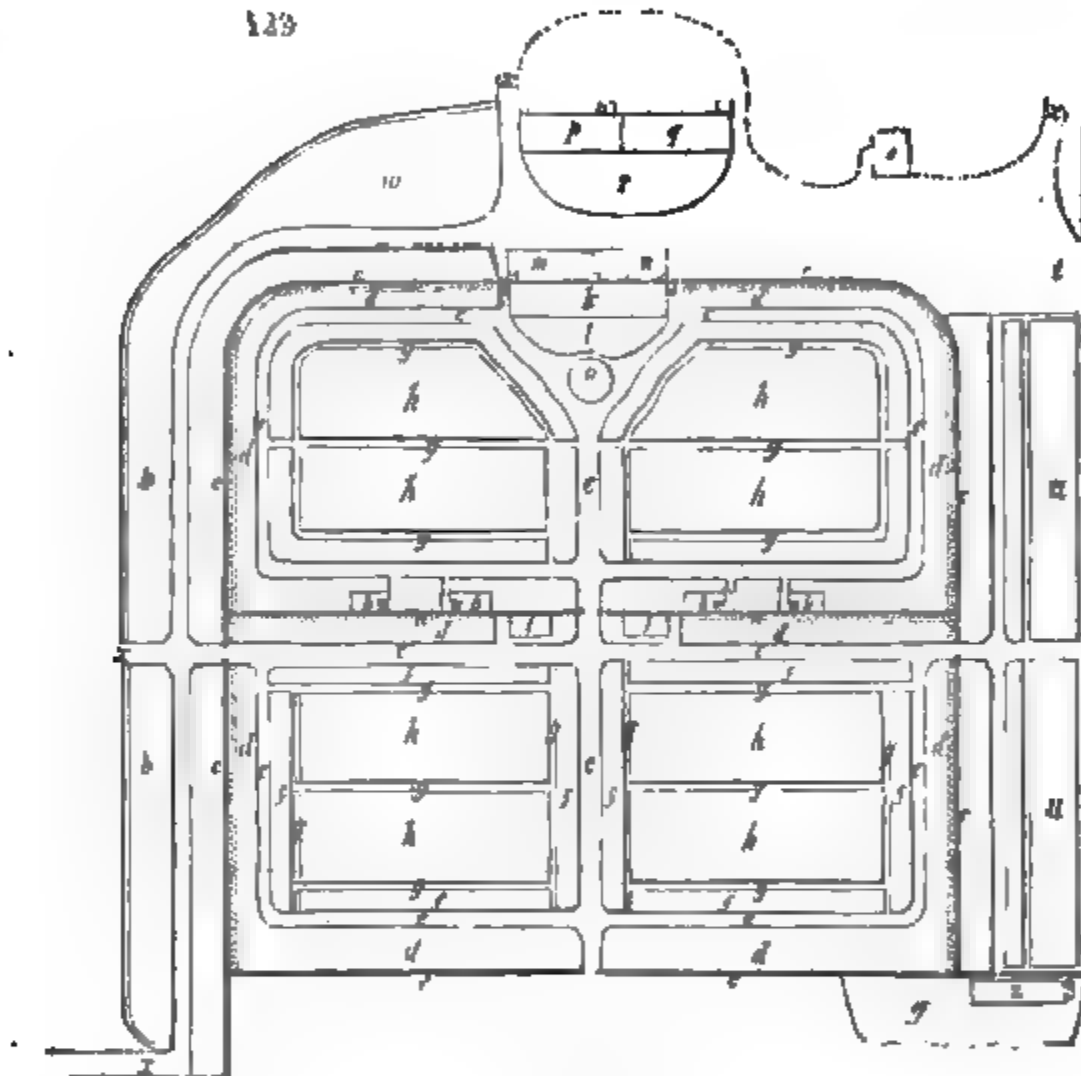
Hereford, January, 1830.

WM. GODSALL.

ART. IX. *Plan and Description of the Kitchen-Garden at Carlton Hall, the Seat of Miles Stapylton, Esq.* By W. SEYMOUR, Son of Mr. John Seymour, the Gardener there.

Sir,

I SEND you a plan of our garden at Carlton Hall (*fig. 129.*), not that it possesses any decided advantage over the generality



of private kitchen-gardens, but it is considered very convenient in most of its divisions, although it has the disadvantage of being placed too near the back of the house, by which we lose the advantage of a south wall and border, as that is occupied by the court-yard and out-offices.

This garden contains about two acres, and is divided into two parts by a flued wall (*a a*), about 10 ft. high, running east and west; with four small fire-sheds (*b b b b*), the two middle ones having two furnaces each in them. The outer walls (*c c*) are about 11 ft. high, and the wall-borders (*d d*) 12 ft. broad; the walks (*e e*) 5 ft., except the centre ones, which are 6 ft. wide; and the dwarf fruit tree borders (*f f*) 7 ft. broad; the alleys (*g g*) 3 ft. wide; and the compartments for vegetables

(*h h*) occupy the remainder of the ground, except two small vineries (*i i*), and the succession pine-stove (*k*), 60 ft. long by 17 ft. broad; with the vine-border (*l*), tool-shed (*m*), seed-room (*n*), and a basin for water (*o*), supplied by a forcing-pump, which likewise supplies the mansion. There are a fruiting pine-stove (*p*) with a peach-house (*q*) on the same range, and the sheds for pots and wheelbarrows at the back; a border in front of the pine-stove and peach-house (*r*); a coal-house (*s*); a cart-road into the park (*t*); a slip on the east, planted with gooseberries and currants (*u*); an herb-garden on the west (*v*); a filbert ground (*w*); and walks leading to the pleasure-ground (*x*). The melon-ground (*y*) is situated near the stable-yard, with a small pit (*z*), heated by fire, for either melons or pines.

I remain, Sir, yours, &c.

Ealing, June 13. 1829.

WM. SEYMOUR.

ART. X. *Plans and Sections of the Horticultural Buildings for a Kitchen-Garden of Three Acres and a half within the Walls.* By JUVENIS OLITOR.

Sir,

ENCOURAGED by the insertion of my plan for a garden establishment (Vol. IV. p. 215.), I am induced to send you the plans of some of the buildings in it, as I proposed. I shall not enter into the minor details of each structure; for if I were to give a full explanation of every thing requisite in the erection of any one of the houses or pits (such as the shutters, boilers, pulleys, &c.), it would occupy too much room in your most useful publication, perhaps to the exclusion of the communications of abler correspondents. I shall give the ground plan and sections of every house and pit with as brief an explanation as I possibly can, which by the references given will be sufficiently understood by every class of your readers.

The plans (*figs.* 130. to 138.) which I now submit to you are arranged to be heated by hot water, which I am practically convinced is a very simple and economical mode of heating forcing-houses; but its merits, compared with steam or fire heat, I shall discuss in some future communication. In heating houses by steam or hot water it has generally been the practice, after heating the boiler, to convey the smoke into the chimney close by the boiler, by which I have always thought that a great quantity of heat was lost to the house, and a greater consumption of fuel than necessary required to keep

up the proper temperature; therefore, to make the most of the heat and the fuel consumed, I have carried the flue on the back of both the peach-houses, likewise on the back of *a d*, *fig. 133.*, and *a*, *fig. 136.*; and, if required, the chimneys might, by the use of dampers in the flues, be taken on the back of *b c*, *fig. 133.*, and of *b*, *fig. 134.* I have provided *figs. 133.* and *136.* with wooden shutters, as will be seen by the sections; these will slide over the sashes by means of pulleys, and in the day-time, or when not in use, will lie under the roof.

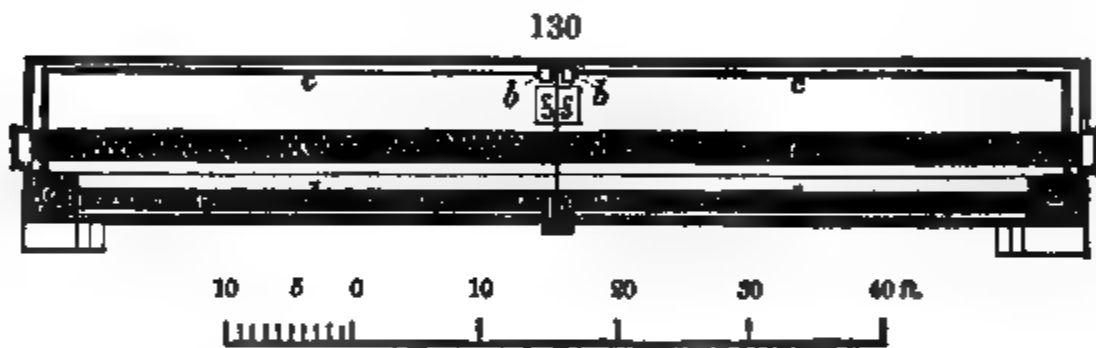
In my last communication (Vol. IV. p. 245.), for "ice-house" read "tool-house."

I am, Sir, &c.

September 3. 1828.

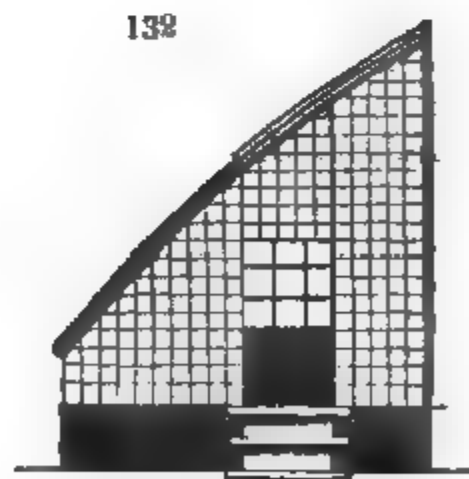
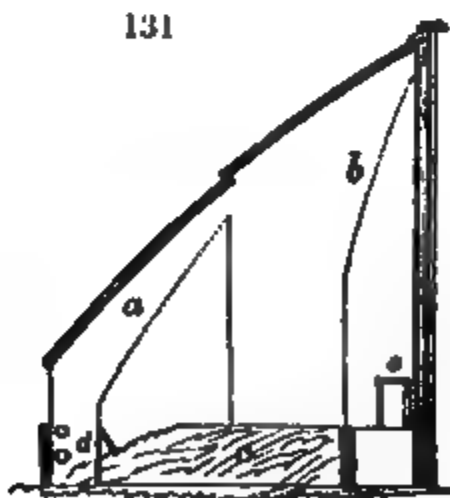
JUVENIS OLITOR.

Ground Plan of the two Peach-houses. (fig. 130.) *a a*, Boilers; *b b*, reservoirs; *c c*, the pipes which go from the boilers



a to the reservoirs *b*, the water returning the same way back by the lower pipe to the boilers; *d d*, flues; *e e*, a trellised walk; *f f*, water cisterns.

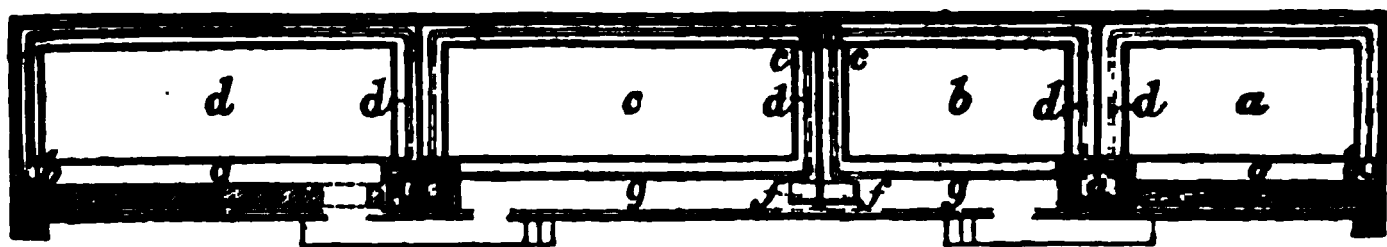
Interior Section of the two Peach-houses. (fig. 131.) *a*, Front trellis; *b*, back trellis; *c*, border for the peach trees; *d*, the pipes; *e*, the flue.



Exterior Section of the two Peach-houses. (fig. 132.)

Ground Plan of the Cucumber and Melon Pits. (fig. 133.) *a b*, Cucumber pits; *c d*, melon pits; *a a*, boilers; *b b* and *c c*,

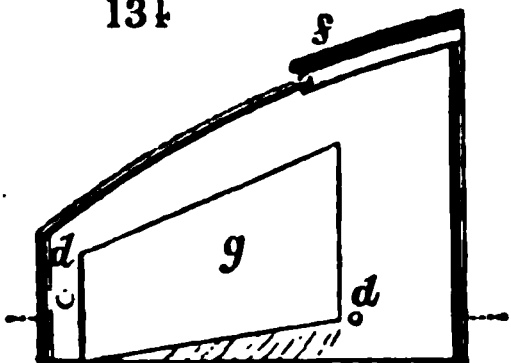
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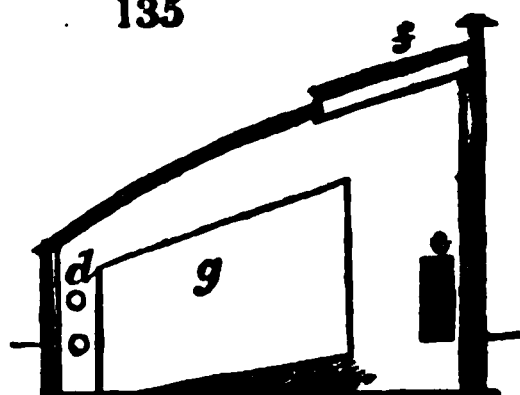
reservoirs; *d d*, the pipes which in *a* and *d* go to the reservoirs *b b*, and return by the lower pipes to the boilers *a a*; but in *b* and *c* they go to the reservoirs *c c*, and return to the boilers *a a* on the back of the pit; *d d*, flues; *f f*, cisterns for water; and *g g g g*, walks.

Interior Sections of Cucumber and Melon Pits (figs. 134. and 135.), showing the pipes d d d, and flue e; f f, wooden shut-

134



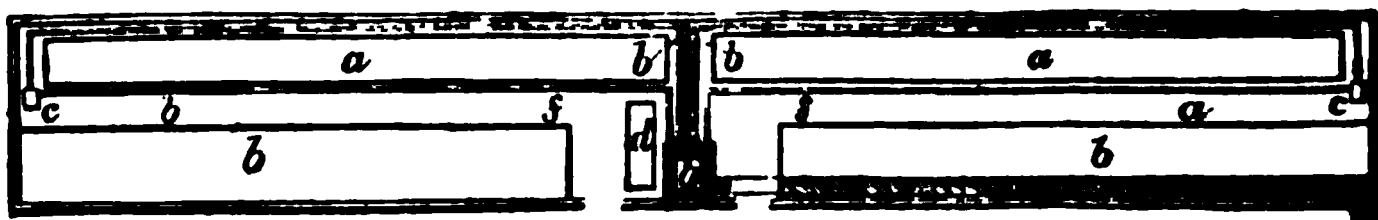
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ters; *g g*, pits to be filled with dung at the commencement of forcing.

Ground Plan of the Asparagus Pits, &c. (fig. 136.) a a, Pits

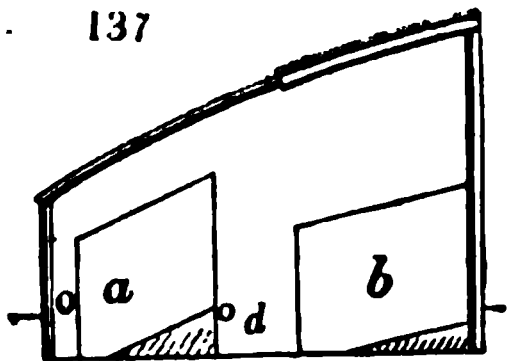
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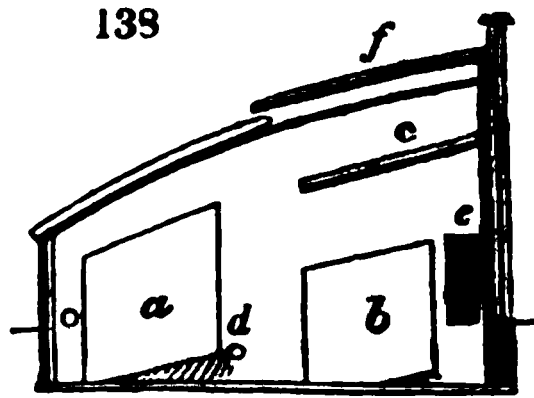
for asparagus; *b b*, pits for sea-kale, rhubarb, &c.; *a*, boiler; *b b*, pipes which go on the front to the reservoirs *c c*, and return on the back of the asparagus pit to the boiler; *d*, cistern for water; *e*, flue; *f f*, walks.

Interior Sections of the Cucumber and Melon Pits (figs. 137.

137



138



and 138.), showing the pits for asparagus (*a a*) and sea-kale (*b b*), and, if required, a shelf for mushrooms (*c*) might be made under the roof; *d d*, pipes; *e*, flue; and *f*, wooden shutters.

ART. XI. *Remarks on Mr. Billington's Pamphlet on Planting, &c.*
By A. G., Perthshire. [See our Notice of this Work, p. 473.]

Sir,

MR. BILLINGTON is more successful in the forest than in the closet, while his antagonists are more distinguished at wielding the pen than the spade; and it is to be regretted that the talents of this kind possessed by the baronet or Mr. Withers should be employed in any degree to detract from the merits of so well-meaning and defenceless a person as Mr. Billington appears to me to be. In writing he is by no means on an equal footing with either; but in point of practical experience, his professional avocations as a gardener and forester have afforded him opportunities of acquiring an intimate knowledge with the practical parts of planting, rearing, and pruning forest or other trees or plants, which neither of these gentlemen can possibly possess, however beautifully they may flourish with their pens, when they fancy they have hit on some discovery in the economy of vegetation; which, however, has been familiar to the mind, and formed part of the every-day practice, of every gardener worthy of the name, for a century before either of these modern foresters was in existence. Their writings, however, are not without their use. They are read by the upper ranks of society, who would hardly deign to look over the less finely turned periods of the obscure practical forester or humble horticulturist; and thus they excite attention to a subject amongst that class to whom it is of the most importance. If practical gardeners should have leisure and inclination to glance over their works, they could not help smiling at the mighty importance which these great personages attach to, and the overweening anxiety with which they endeavour to appropriate to themselves, what they conceive to have been hidden from the wise of all former ages, and instinctively revealed to them, and generously published by them for the benefit of all ages yet to come; processes, too, of which every professional gardener would blush if he supposed he were thought ignorant; and some few favourite theories the absurdities of which he would blush not to be able to detect. I believe the love of fame is a besetting sin with poor and rich; and in the pamphlet before us I can detect a little spice of this frailty in our friend and brother, Mr. Billington. I do not blame him for claiming his honest share of that fame of which he supposed himself robbed; but I am sorry he has done it in so bungling a manner. Allowances, indeed, must be made for irritated feelings, and other existing circumstances connected with his "permission to retire" from an office in which he evidently

delighted, and by which he obtained his living. I am also sorry that either of the authors should hint at invidious national distinctions between Scotch and English, as if they really were two distinct species of animals; and that the baronet should have known so little of the acquirements of gardeners in general, as to have led him to treat of them as a race deserving to be proscribed from the management of forest trees; a department at least very closely connected with their profession, and which forms a part of their study in the early part of their lives.

I have been led into these reflections by the general tenour of the pamphlet, and shall conclude my brief notice with the following extract concerning the *Quercus pedunculata* and *sessiliflora*, or *Ròbur*, entreating your readers to communicate through this Magazine any particulars they may think worthy of notice, respecting the habits, thickness of bark, and quality of timber of each of these species, and their sub-varieties.

“Among all our writers on planting which I have read; not one that I recollect, except Mr. Loudon, in his *Encyclopædia of Plants*, which I saw since I first sketched these observations, has alluded to the quality of the two distinct species of British oak; only botanists notice two species. Now I well recollect that when I was in the Forest of Dean, the *Quercus sessiliflora* was designated by the old experienced wood-cutters as the knot acorn oak, from the acorn growing in clusters, close to the stalk, and considered as producing much better timber than the other kind. As well as I can recollect, the leaves have a darker hue, and more glossy appearance, with more numerous branches subdivided into a greater number of smaller ones, diverging from the stem in a more horizontal direction; whereas the branches of the other species diverge with more acute angles in a more upright position, and do not produce so many small branches, nor such close heads. Might not the knot acorn oak, from its more numerous and smaller limbs and branches, with more annual buds, with young shoots, whereby the tree is increased in substance, tend to give it a firmer, tougher, and harder texture than the other species, similar to what the Billingtonian system of pruning would effect?” (p. 57, 58, 59.) Both species are described and illustrated by wood-cuts in the *Encyclopædia of Plants*, and the parts of fructification minutely described and illustrated in the first volume of the *Magazine of Natural History*. I intended to give an extract respecting a process of planting an extensive “bare rock,” but I must refer to the work itself for this and other amusing and useful hints.

Perthshire, July, 1830.

A. G.

ART. XII. *Pontey's "Forest Pruner" versus Cruickshank's "Practical Planter," on the Subject of pruning Fir Trees.* By A YORKSHIREMAN.

Sir,

IN common with the reading and thinking part of mankind, it is with me, as I am happy to find it is also with yourself, a subject of unfeigned regret that book-making, in contradistinction to book-writing, is daily becoming much too prevalent; the inevitable consequence of such practice is, on the one hand, by their conflicting contents, to distract the public attention; while, on the other, their unpardonable repetition of superannuated and long exploded dogmas tends only to disgust.

There is another practice also, and that not the most honourable, with which these modern babblers stand charged, — an instance of which, in addition to the one I am about to complain of, you point out in your review of Mr. Cruickshank's *Practical Planter*, — viz. whenever they attempt to palm upon the world what they would wish to have believed as original and good, they generally misquote those authors whose writings seem to stand in the way of such theories being received.

Among the description of modern book-makers just alluded to, Mr. Cruickshank (as shown in p. 456, 457. of your Magazine) stands, I think, deservedly preeminent.

It is not, however, my present intention to observe upon that gentleman's *Practical Planter*, further than as it applies to Mr. Pontey's book called the *Forest Pruner*, the principles of which are, as have been proved by thousands (myself among the rest), invaluable. If, then, in the course of my observations, I happen to show that Mr. Cruickshank, in his *Practical Planter*, is attempting to retail old and exploded errors to the public as his own (for it does not appear he gives us more than his *ipse dixit* for it); and, to support his assertions, has misquoted that passage in Pontey's *Pruner* which appears to oppose them; by putting your readers upon their guard against such malpractices, I shall have rendered the state some service: for, to say the least of such acts, whenever duplicity is practised, the result can never be honourable to the parties, and rarely beneficial to the public.

In order, however, to enable your readers to put a proper value upon the assertions in the *Practical Planter*, and the demonstrated proofs given by Mr. Pontey in his *Pruner*, it seems necessary to premise that Mr. Cruickshank acknowledges his practice to have been confined chiefly to one situation (at Careston, the seat of the Earl of Fife): its whole length

he fixes at fourteen years, the greater proportion of which, it appears, he was employed in the nursery : while the practice of Mr. Pontey has extended to nearly every county in the kingdom ; and its duration, at the period of the last edition of the *Pruner*, fell little short of forty years. To prove Mr. Cruickshank guilty of retailing a superannuated dogma respecting the pruning of fir trees, I need only refer you to Nicol's *Planter*, published in 1799 (p. 213.), where he says, " it can never be proper to lop the branch of a fir tree by the bole. From the resinous juice which follows the tool, at any season of the year, all wounds become, and continue to be, blemishes." How far such dogmas have been exploded is evident, from the almost universal adoption and beneficial effects of Mr. Pontey's method of pruning.

Mr. Cruickshank says, " Independently of any other consideration, the very form in which a fir grows appears sufficient to teach us that pruning, if not attended with actual injury, can at least be productive of no benefit to the tree. An ash or an elm, for example, has a constant tendency, if left to itself, to depart from the shape which constitutes its chief value. It is continually throwing out branches, which become rivals to the leader, and either bend it out of its upright course, or starve it by exhausting an undue quantity of sap, and thereby disqualifying it for carrying up the tree. Hence the great use of pruning trees of this kind is to protect the leader from the rivalry of the other branches, to the end that as much of the nourishment drawn from the earth may be employed in promoting the growth of the stem, and as little of it expended on the top, a part which is comparatively of little value, as is consistent with the laws of vegetation. But, in the case of firs, this use of pruning has no place. Their horizontal branches never interfere with the leader, nor obstruct its progress in the smallest degree. It always, unless broken accidentally, or killed by the frost, appears above the most elevated of the horizontal shoots ; and they, instead of injuring or supplanting, seem to assist it in keeping its perpendicular position, as those of the same elevation grow of equal length all around it, and produce a perfect equilibrium. Hence it would appear that the pruning of firs, supposing it harmless, can yet be productive of no positive good, so that to practise it would be to labour and lay out money for no end ; a species of industry and expenditure which deserves any epithet but that of rational."

Pruning ash or elm, it appears, then, by your review, is allowed by Cruickshank, in common with every well informed man, to be *beneficial*; and here may I be allowed to

enquire in what way is pruning beneficial? Most assuredly by producing a greater quantity of straight clean timber. If, then, it is acknowledged by this author, that pruning is necessary to produce clean straight timber, the want of such pruning must produce the reverse, viz. knottiness, short stems, and large branches.

The principle of pruning being admitted, I may be allowed to ask, who is to determine or draw the line as to where this principle shall cease to operate? Are the innumerable proofs that we have daily before our eyes, in every part of the country, of the beneficial effects of the judicious pruning of fir trees, to be quietly laid aside to allow this man of fourteen years' experience (who has the impudence to ground some of his nostrums on what he calls "careful calculation rather than on actual experience") to say, hitherto shall it go and no farther? Certainly not; without he can clearly show that Dame Nature, who has been heretofore considered consistent in her operations, has, in this case, to suit his dogmas, falsified all her previous practices.

He has, indeed, attempted to show that the shape of the fir tree is less liable to suffer from the want of pruning than that of others (a fact previously very well known); but as to the comparative increase of clean straight timber, which, as Pontey incontrovertibly shows by his plates and works, can only be produced to any beneficial extent by pruning, our *wordy* author, it appears, ventures not a syllable; unless the following paragraph can be taken as such, being Cruickshank's misquotation of Pontey's *Pruner*, and the false conclusions founded upon it of which I complain.

Mr. Cruickshank proceeds: — "Harmless, however, the process in question is far from being; and I have known more than one thriving fir plantation utterly ruined by it." Here, as the advocate of pruning firs, I may, perhaps, be allowed to ask the author, whether it was in the use of Mr. Pontey's theory, or the abuse of it (for I have somewhere read, the best of things may be abused), that such plantations were "utterly ruined"? And surely, taking the immense importance of such an event into consideration, I shall not be deemed extravagant, or unnecessarily dubious, under Mr. Cruickshank's circumstances (having been caught tripping by yourself and others), if I enquire where those plantations were, also their age and state previously to such ruinous application, with such other circumstantial information as will enable me and the public to come to something like a correct conclusion. Bare assertions, where abundant proof is, or ought to be, at hand, are, generally speaking, very suspicious, but more par-

particularly so in his case. Mr. Cruickshank proceeds: — "Mr. Pontey tells us that it is the cutting off too many branches at once that causes injury; and that if we take away only two or three tiers at a time no bad effect will ensue." All this is very true; but Mr. Cruickshank goes on: — "Let any person remove this number of living branches from a Scots fir or spruce, of *seven or eight years old*; let him, at the same time, ascertain its height, and mark some of the plants contiguous to it, which are exactly of the same size. By measuring it and them three years afterwards, and comparing the progress of the former, made in this interval, with that of the latter, he will have a practical demonstration of the utter fallacy of Mr. Pontey's assertions." Here I would ask this immaculate author, does Mr. Pontey indeed state, "that *two or three tiers of living branches are to be removed from a Scots fir or spruce of seven or eight years old?*" Most assuredly not. Let Mr. Pontey speak for himself: — "If the first pruning took place when the plants were about *8 ft. high*, it might then be necessary to displace *two, or at most three tiers* of the lower branches, and two years afterwards *two sets more* of the same description; after which intervals of *three years* might elapse between the prunings, never displacing more than *two tiers* at once, except more should *prove dead*." Now, I am aware, to a casual reader, or an unpractised man, the difference between a Scots fir or spruce of *seven or eight years old*, and one of *8 ft. high*, may appear exceedingly trivial; but what is the matter of fact? A spruce fir at three years old, upon an average, will be from 12 to 14 in. high, having upon it two tiers of branches: supposing it then to be replanted into a nursery bed, it becomes four years old, and has three tiers upon it, having added about 4 in. to its height; let it then be removed to its ultimate destination. The first year after planting it upon the forest ground it will seldom grow more than about 3 in.; it is now five years old, and has got four tiers of branches: the next two or three years it will not average more than about 12 in. per annum. We have now got a fir, seven or eight years old, with six or seven tiers of branches upon it, and from 4 to 5 ft. high: now, by the same rule, to produce a fir 8 ft. high, it must be about eleven years old, and have ten tiers of branches upon it. If the statement above be correct as an average, and Mr. Cruickshank shows in your Magazine (p. 466.) I am not far off, it then appears that Mr. Cruickshank's statement, of Mr. Pontey recommending from two to three tiers to be removed out of six or seven tiers of branches, is totally false. The fact is, that "*two and at most three tiers at once*," and *those only in the first pruning*, when they are all within 2 ft. of the ground,

and, of course, very small, are to be removed from a tree having nine or ten tiers of branches upon it; the residue of branches left upon the tree being, by Mr. Pontey's *Pruner*, seven tiers, and by Mr. Cruickshank's quotation four tiers: but let any one read from p. 179. to p. 190. in Pontey's *Pruner*, and he will discover a still greater difference between Mr. Pontey's ideas of pruning firs, and Mr. Cruickshank's assertion regarding the number of branches to be removed, than is shown even in this statement.

A fir, too severely pruned, sometimes bleeds at intervals, till it regains its proper quantity of branches.

Oak, ash, elm, &c., under such circumstances, throw out lateral branches upon the stem, and near the largest wounds. *Pontey's practice produces none of these effects.* But to return; Mr. Cruickshank says, "Let any person remove this number of living branches," &c. Mark the matchless modesty of the man: "Let any one try the experiment,"—an experiment that is to be of three years' duration. Has he not already tried it? If so, why not assert it? Possibly he has cogent and special reasons moving him thereto. It may be in this case also that his opinion is founded rather on *careful* calculation than on actual experience. However that may be, I am not about to state that the extent of pruning he mentions would not in some trifling degree, for a short time, affect the progress of the plant: it certainly would. Nor am I alone in this opinion; for I find a note in Pontey's *Pruner* (p. 185.), which says, in the *Transactions of the Society of Arts*, vol. xxiv. p. 68., we have a paper "on the advantages and method of pruning fir trees," by Mr. Salmon, surveyor and wood-agent to his Grace the Duke of Bedford, which clearly shows the propriety both of pruning and cutting close. The opinion of a person so intimately acquainted with the application of timber cannot fail to be conclusive on these points. Still I think his theory, both with regard to the quantity of tiers of branches to be taken off at once, and the period to elapse between the prunings, is highly objectionable. For a long observation has convinced me, that "taking a large quantity of branches from a fir, at once, disorders it so far as considerably to retard its growth, even in shelter." But has our worthy author indeed written a book of 440 pages upon this subject, and has he still to be told, that, even allowing the tree at this age in the first instance to be somewhat too severely pruned, the first or second year's growth would again set the matter right; and has he also to be told, that the cut produced by the taking off of branches from one quarter to half an inch in diameter, being the size alluded to both by

Mr. Pontey and himself, is in three years not only covered with resinous matter but also with bark? Oh, Shame! where is thy blush!!

Mr. Cruickshank proceeds: — “The taking off of a few branches will not, of course, be so injurious as the displacing at once of a great number; but *none* can be displaced, as *the above experiment will show*, without materially retarding the growth of the plant.” As correctly would he argue, were he to state, that because fire uncontrolled would destroy the house, a little, well managed, is not desirable, and beneficial also.

By this time your readers will have become a little curious to know how it happens that pruning should not be beneficial to firs. The fact is, that, though Mr. Cruickshank tacitly acknowledges, by his remarks on pruning the ash, elm, &c., that Mr. Pontey’s demonstrations with regard to pruning firs are correct as to producing clear and straight timber; yet it would not be quite so convenient for him, and the superannuated theory he has adopted, to state in so many words, if you mean to have the greatest quantity of fir timber, free from knots, you must prune; that would be showing the cloven foot too clearly. It suits his drivelling ideas better to attempt by a side wind to degrade what he dare not openly attack, by stating that pruning injures fir trees, simply because they bleed after such operation; and to insure such bleeding to those who try the experiment, by misleading the public with the misquotation complained of: the fact being — and I here dare Mr. Cruickshank to the proof (not to the assertion) — that not a single acre, nor any quantity of plantation of from twelve to twenty years’ old, or upwards, either in England or Scotland, which has from its planting been managed by Pontey’s theory strictly, has been either entirely or at all injured by such practice; but, on the contrary, when compared with those under the non-pruning system, will turn out very much superior.

I am aware of the estimation in which anonymous communications are held, but my insignificant name would add little to their weight; I shall therefore, with all due respect, remain,

Sir, yours, &c.

Barnsley, Sept. 22. 1830.

A YORKSHIREMAN.

OUR opinion is, that both Pontey and Salmon were wrong in their theory and practice, as to pruning pines and firs. It is very well to defend Pontey, no longer with us to defend himself; but it is more for the interest of science to acknowledge that he rather overpruned the pine and fir tribes. In this opinion we particate with many others. — *Cond.*

ART. XIII. *On Pruning, and other Points in the Management of Timber Trees.* By W. T.

Sir,

By this time, I suppose, the authors of the two books lately published on arboriculture (one at 21s., the other at 12s.) are aware that they have not given the public much *new* on the subject which they undertook to illustrate: at least, those who have added to their own practical experience an acquaintance with the works of the scientific and professional writers on tree culture, will not be easily convinced that they have derived much information from the books alluded to. However, these books, in common with others, will be the means of raising a spirit of enquiry and investigation in this hitherto partly neglected branch of culture.

Gardeners, in general, are now not so ignorant in horticultural chemistry and vegetable physiology as some would imagine. Many gardeners, I trust, will join me in saying that we are much indebted to the *Encyclopædia of Gardening*, in which we have the essence of the best writers on all points of importance, both within and "without the garden walls." At the same time, it must be admitted that there are some gardeners who think arboriculture below their notice; others, perhaps, know more than they are allowed to put in practice. It is but fair that he who pays the piper should make him play as he pleases: notwithstanding, if the piper can play better, he should beg to be heard; and, after having given proof that he does not overrate his abilities, it is likely he will be allowed to go on in his own way.

I have had some experience, during the last 17 years, in planting and transplanting trees, from a two-years Scotch pine up to a tree a foot in diameter. Most of the transplanted trees have done tolerably well, and I approve of transplantation in some cases: but my opinion is, that transplanting a tree after it is, say, four or five years old dwarfs it more or less, and also tends to bring some species too soon into a bearing state. This, in a great measure, can be obviated by picking off the blossom, trenching, pulverising, and rectifying the soil at the extremity of the roots. A tree which has been transplanted can be more safely transplanted again; but will such a tree, with its numerous matted roots, extend as far in search of nutriment as, and become equal in magnitude to, a tree either planted young, or sown or grown on the spot?

The rules for pruning given in your review of Cruickshank's book are excellent. Sylvanus and Agronome seem to differ much in opinion on that point. In thinning a plantation of

Scotch pine and larch (say from 20 to 30 years old, if it has been very thickly planted, which is the only way to make clean wood, the lower branches being all dead), I prune up the trees 6 or 8 ft. This is necessary in order to see how to thin them properly, and will do them no harm, provided due care be taken not to bark the trees to be left. Some years ago I pruned some thriving larch, from 50 ft. to 60 ft. high: the branches were sawed off as far up the tree as they were dead at the time, 25 ft. or thereabouts; of course the trees did not bleed, therefore were nothing the worse. Now, it is plain that, when those trees come into the hands of the carpenter, they will be freer from loose knots than had the trees continued to enclose part of the branches until they dropped off naturally.

In short, I am an advocate for raising all forest trees, if possible, from seed; trenching ground that will grow hard wood trees, and keeping it clean a few years after planting; planting young, i. e. strong, well-rooted plants not above four years old; stunted plants being headed down; pruning from *infancy*; summer pruning, although only thumb-pruning (a person will do a great deal of good this way, by going over a young plantation in the month of June); and last, though not least, keeping in view that leaves are the lungs of trees.

On the other hand, I do not approve of pruning tree roots at the time of planting, unless they have been damaged; planting evergreens in this part of the country earlier than April; pruning the same while the branches to be cut off are alive; soft-wooded leaf-trees as nurses for hard-wooded trees; or twin-stemmed and double-topped trees. If one of a double-stemmed tree of the pine tribe be cut off the other will die, except it is done while the tree is young: hence the propriety of looking over plantations.

Agronome seems not pleased that all the tops of the hills in Scotland are not covered with wood: many of them in this "northern corner" are so. The summits both of hills and mountains have been planted but have not grown; their tops being almost solid masses of rock with scarcely any covering of soil, and it may be that their height is an obstacle to the growth of trees. More barren ground might be planted: but thousands of acres could be planted in Scotland, and grow the very best of Scotch pine, &c. At the same time, from being inaccessible, and distant from a market, the wood, in all probability, would not be worth a shilling to the proprietor.

I am, Sir, yours, &c.

Aberdeenshire, Sept. 1830.

W. T.

ART. XIV. *Description of Mr. Groom's Tulip Bed.* By J. M.

FLORISTS have found that tulips are liable to injury if exposed to frost and rain, especially during the months of February, March, and April. To secure these favourite flowers from such casualties, Mr. Groom, the eminent florist at Walworth, near London, has constructed a model of a tulip-bed frame, which not only admits of the perfect protection of the plants, but also very much facilitates the arrangement, planting, and covering of the roots.

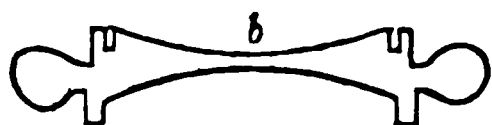
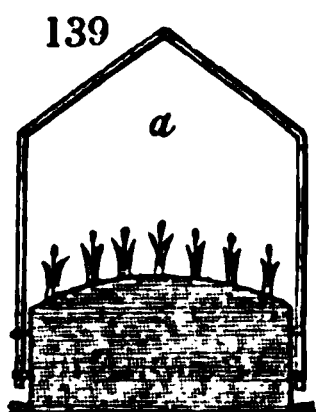
The bed, which, in the first place, is trenched 3 ft. deep, is raised by side and end boards, framed together, to the height of from 12 to 15 in. above the surface of the ground. It is 4 ft. wide within, and of any required length. The prepared soil is raised to within $3\frac{1}{2}$ in. of the top. For the purpose of levelling the surface accurately, Mr. Groom uses a thin piece of board called a *strike*. This is longer than the width of the bed, and has notches near each end $3\frac{1}{2}$ in. deep, which fit on the upper edges of the side boards; and, on being moved from end to end, lays the surface into the desired form. The lower edge of the strike is not straight but curved, so as to leave the surface of the mould about 2 in. higher in the middle than at the sides.

When the surface is thus regulated it is ready to receive the roots; their places are marked with the greatest ease by means of the strike. Seven rows are planted lengthwise of the bed, at the distance of 6 in. from each other and from the sides. Of course the strike is divided into eight spaces. At the marks between the spaces, small staples, one about 2 in. above the other, are driven into the flat side of the strike; these receive seven small pegs or dibbers, which, when the strike is put down across, mark the places of the bulbs. The distances between the cross rows, viz. 6 in., being marked on the sides, regulate the insertions of the strike.

From this description it may easily be conceived with what accuracy and expedition the planting is done. The roots being deposited in their places, are now covered with the proper compost; and the surface is smoothed off with the back of the strike, which, for this purpose, is formed with a curve and shoulders which take in the whole width of the bed and side boards, against which last the shoulders slide while the strike is moved onward to take off the redundant covering, leaving the surface regularly rounded from side to side, 6 in. higher in the middle than at the sides.

When the season arrives that coverings against frost, &c., are necessary, iron rods, three fourths of an inch in diameter,

and bent into a regular form, are fixed over the bed. These bearers are kept in place by the upright parts of them being inserted into two staples, one above the other, driven into the side boards at distances of 2 ft. 6 in. apart, the first being fixed at the end. These bearers rise from the edge of the bed to what may be called the eaves of the awning, 2 ft. 6 in.; and then slopingly upward and over, forming an obtuse angle like a ridge over the middle of the bed. To connect these bearers, fillets of thin deal are fixed along the eaves and on the top or ridge, and thus a frame is formed sufficiently strong and steady to support any covering of mats or canvass which may be necessary for the safety of the plants.



The annexed sketches of the frame (*fig. 139. a*) and the strike (*b*) will assist in giving a right idea of the construction of the former and the form of the latter.

This frame and covering is only intended to preserve the tulips till they begin flowering; after which, Mr. Groom advises that they should be shaded and sheltered by a larger and loftier awning, as is his own practice.

ART. XV. *On the Genus Aster.* By T. RIVE'RE, Esq.

Sir,

I do not recollect seeing in any of your Magazines a treatise on the *Aster*; perhaps many readers will say it is not worthy of it, being so common, and to be found in almost every cottager's garden. However, I will endeavour to point out such beauties of the flower as have fallen under my practical observation. Asters which bloom in August, perhaps, may not be worth attention, being eclipsed by a host of showy herbaceous plants and annuals, and above all by the splendid *Georgina*: but even then they have their own beauties, in which they at least equal most of the flowers at this time in bloom. Their extreme hardiness, their facility of propagation, and their thriving in almost any soil, however poor, are certainly inducements for their introduction into gardens, where the occupiers cannot bestow much attention on the cultivation of flowers: but where cultivation and taste are combined, the *Aster*, as in other flowers, can hardly be deemed the same, either in the strength of the plant or size of the blossoms; for instance, I have one in my garden, *Lácteus altíssimus*, or

French white, which is now 12 ft. in height, and the other kinds are in proportion fine. The under-mentioned sorts are in flower from the 12th of August, and continue to the middle of September. I grew one clump of them, and have inserted the height each sort attains for the information of any one who may be disposed to bloom them in a similar manner; of course, the highest in the middle, the second highest next, and so on, and the shortest outside.

Asters in Bloom in August.

		Height in feet.
Cordatus, small white flower, red stamina	-	4
Bellidifolius, small white flower	-	3
Latifolius, bluish white	-	2½
Sibiricus, azure blue	-	2
Punctatus, lilac colour, small blossoms indivi- dually, but forms a perfect umbel	} Very handsome	1½
Corymbosus, large reddish blue flowers	-	1
Solidaginoides, small curled white flowers; singular and pretty		0½

But August presents a meagre collection; nor is it of much consequence, for, as before observed, there are then plenty of flowers in bloom. But I presume, when I come to describe the asters in bloom from the first of October, and during the month, I think I shall be able to point out such beauties in the flower, and to convince (I am myself convinced) the lovers of the flower-garden, that there is no herbaceous flower during the month of October to be compared with the *Aster*, its species and varieties.

Asters in Bloom in September.

	Height in feet.
Floribundus, large white flower,	4 to 5
Blandus, bluish white	4
Cyaneus, fine dark blue	3
Rigida, lilac	2
Patens, fine large dark blue	1½
Pulchellus, or globosus, small white flower, red stamina	1

The 10th of October, this season (1829), we had a killing frost. On Michaelmas day, on surveying the numerous tribes of flowers which the day before shone with resplendent beauty, behold the melancholy appearance! The splendid georgina, king of autumnal flowers, turned black and withered, and pretty well all the annuals had shared the same fate. I would ask what flowers the borders produce to ornament the month of October. None but the *Aster*, the only hardy perennial which blooms at the beginning, and continues throughout the whole month; and why should one month, and that rather a dreary one, be left unornamented with the beauties of Flora?

Asters in Bloom in October.

	Height in feet.
<i>Ròseus</i> , bright pink	7
<i>Nòvæ A'ngliæ</i> , purple	6 ⁿ
New Belgic, fine blue	5
<i>E'legans</i> , white	4
<i>Ericòides</i> , white	4
<i>Salicifolius</i> , pale blue	4
<i>A'sper</i> , white	4
<i>Mutábilis</i> , white, changing to red	3½
<i>Comòsus</i> , or <i>umbròsus</i> , small white flowers and stamina	3
<i>Améllus</i> , purple	2
<i>Rivèri</i> , small elegant white flowers *	0½

There are some few other flowers in bloom contemporary with the asters: the *Heliánthus* tribe, — but they are all yellow; a *Pyrèthrum* or two, *Phlóx marylándica*, *Solidàgo sempervirens*, and *Rudbéckia speciòsa*. I know of scarcely any other kinds.

I have raised from seed, for two or three years past, a great number of asters. I generally sow the seed in April, and most of them bloom the following autumn. This season I have had more than 1000 in bloom from seed sown last spring; from which I have selected about 50 decidedly handsome and distinct varieties, the others, being almost all alike, I generally pull up and throw away as they bloom. I have formed a separate clump of them; and the asters before enumerated do not contribute more, nor perhaps quite so much, to the embellishment of my flower-garden, in October, as the seedlings. There are all degrees of colours, from the dark blue to the most beautiful azure; from the rose to the delicate blush; from the pure white to the French and greyish white, &c., in numberless varieties of shades and sizes; some of the flowers being the size of a sixpence, some an inch or an inch and a half in diameter, and some semidouble. I generally impregnate them, by tying the flowers of the rose-coloured on the white, blue on the rose, &c. It is incorrect to affirm that the afore-mentioned kinds bloom only through the month specified; some of them may be in bloom the beginning of the preceding month, and some may extend perhaps to the first or second week of the succeeding. However, on accurate observation, I can decidedly pronounce them to be in full bloom pretty well during the respective months as enumerated.

* *A'ster Rivèri* was raised from seed by Rivers and Son, nurserymen, Sawbridgeworth, Herts, three years since, and is one of the shortest; it blooms with a beautiful tuft of small white flowers, and is a very pretty variety. Most of the asters mentioned in the list before enumerated I procured from them, and they likewise possess as extensive a collection of herbaceous plants, &c., as any nurserymen in the kingdom.

Any one who attends to the cultivation of this autumnal flower, instead of having his flower-garden nearly destitute of flowers during one month of the year, may have it highly ornamented with the *Aster*.

The principal motive of this communication is to recommend flowers for the embellishment of the month of October *only*; but as I have enumerated the kinds of asters which bloom in the two antecedent months, to wind up I have inserted a few sorts underneath which flower from the middle of November to Christmas; though the same argument will hold good which is applied to the sorts flowering in August and September, as from the middle of November to Christmas the garden is ornamented by that matchless winter flower the *Chrysanthemum*.

Asters in bloom from the First of November to Christmas.

	Height in feet.
<i>Lacteus altissimus</i> , French white - -	12
<i>Purpureus altissimus</i> - -	from 8 to 9
<i>Grandiflorus</i> , fine large blue - -	3

I am, Sir, &c.

T. RIVÈRE.

Hampden Cottage, Sawbridgeworth, Herts,
November 4. 1829.

ART. XVI. *On the visible Cause, and easy and effectual Cure, of the bad Setting of some Sorts of Grapes.* By MR. JAMES CRAIG, Gardener to G. Cholmeley, Esq., Howsham, York.

Sir,

I DARE say it is well known to you that a great many of those vines which “have blossomed but brought no fruit” have been hewn down as cumberers of the ground, and probably many more have been condemned before they were fairly tried; and if such there are, I trust that what I am about to state will be the means of saving them from the fatal axe. I have at this place a vine under my care, which is a very bad setter; it is an old plant, growing in a double-pitted pine stove. Previously to my coming here it had been condemned for an apparently good reason, which was, it had never brought to perfection more than about a dozen berries on a bunch; the residue were about the size of peas. I was informed of its faults, but nevertheless respited it, and have been amply rewarded for my clemency. It ripened, last year, a very fine crop, the bunches from 1 lb. to 3 lb., well filled with berries, considerably larger than those of the white

Tokay. I am not certain of its name as I never saw the sort before ; nor could any gentleman or gardener who saw it tell me what it was : but three good practical gardeners, to whom I sent single berries, informed me it was the *Palestina*. Be it what it may, it is an excellent grape, of good flavour, and one of the best of keepers : the fruit was ripe in July, and I cut the last bunch in Christmas week. The berries are of a dark red colour, and of an oval form.

I presume that the following observations and treatment of this vine will be equally applicable to many other bad-setting sorts : —

On close inspection, when the blossoms are fully expanded, it will be obvious to every observer who is acquainted with the parts of the fructification, that the main cause of their abortiveness is a defect in the filament, and not in the anther, as supposed by many. It will be found that the filaments are very small and recurved, so as to render it almost impossible for the anthers to come in contact with the stigma of the same blossom, and I am persuaded there is a sufficient quantity of pollen on the anther for the fecundation of the stigma ; but so awkwardly is the anther situated, that in very few instances can the pollen perform its function on the stigma without the assistance of art. The evil may certainly be remedied in a great measure by suspending over its racemes those of any free-setting sort, when the flowers of both are fully open ; or by intermixing with its branches the branches of any free-setting sort that may be expected to flower at the same time : but in many cases neither of these methods would be convenient, nor do I consider them at all necessary.

About half of the bunches I impregnated with the pollen taken from the bunches of other sorts in flower at the same time, collected with a soft camel-hair pencil, in the following manner : — I took a sheet of white paper, and held it under the bunches from which I intended to gather the pollen (selecting those which were fullest in flower), and then applied the pencil gently to various parts of them ; and when the pencil was charged with yellow powder, I took it to the bunches which I wished to fecundate, and touched lightly with the pencil the female parts of the flowers, holding the paper as when gathering the pollen ; and what dust fell into the paper I took up in the pencil, and applied it as before. These did as well as I could wish. All that remained (except two bunches) I impregnated with their own pollen, by working the pencil carefully among the flowers, and by that means dispersing part of the fecundating dust, and collecting part of

it upon the pencil. Of course, by this process, the pencil comes as often in contact with the female as with the male part of the flower; consequently, the fecundation is accomplished by the pollen which is already on the pencil adhering to the stigma while more is collected. By the first of these methods I had rather more berries set than I had by the latter; but I had a great many berries to thin out of all the bunches, except the two which I left unassisted, and which set their berries in the usual way, almost all of them about the size of peas, and without seed. I kept as dry an atmosphere as I conveniently could, from 65 to 82 degrees of heat, in order to absorb a superfluous moisture which collected on the stigma. The operation was generally performed about noon, when the bunches were dry. It is necessary that the operation should be performed every day while the trees are in flower (which will be about a week), as some parts of the bunches are only in flower when the others are set.

Yours, &c.

J. CRAIG.

Howsham, February 10. 1830.

ART. XVII. *On the Forcing of Cabbage Lettuce in Holland.* By M. P. LINDEGAARD. Translated from the Danish by M. JENS PETER PETERSEN, of the Royal Gardens of Rosenburgh, near Copenhagen.

It is well known that every country is possessed of something peculiar in preference to another, with regard to vegetation, or to the bringing of some plants and sorts of fruits to greater maturity and perfection; which is partly effected by, or attributed to, local circumstances, as air, soil, situation, or climate.

On the Continent, the Dutch gardeners are undoubtedly the only ones who produce excellent cabbage lettuce during the whole winter. The nobility and gentry in Holland are remarkably fond of lettuce, having it on their table every day in the year, and consider it very wholesome and purgative to the blood: consequently, this branch of horticulture has attracted the greatest care and attention of the gardeners in that country. The treatment of winter lettuce (*coude sla*, Dutch), as I saw it practised forty-four years back, during my stay in Holland, is as follows:—

A hot-bed which has done bearing, and is well situated towards the sun, is chosen: the mould is several times stirred

up or turned over, to make the air impregnate it; and, if too heavy, about half the quantity of mould is taken away, and a similar quantity of good leaf mould put to the remainder, and all well mixed together. Some gardeners take all the mould out of the bed, and loosen the surface of the dung, to make the moisture in winter pass through it freely; and leaf mould only is put on the bed or in the frames: and as the leaf mould is much incorporated with sand, particularly all round Haarlem, it is found very suitable to the growth of cabbage lettuce.

The sort of cabbage lettuce in use at that time was termed *klein groen*, with black seed; but of late years, I am informed, another more palatable sort, *klein geel*, with white seed, is used for that purpose.

The seed is sown very thin, in the first days of September, on a melon bed which has done bearing; and watering with a fine syringe, if the weather continue dry, must not be neglected. When the plants have produced the fourth leaf they are fit for transplanting; the bed having been previously prepared, by digging and raking, is now marked so that one plant will be placed under every pane or square of glass in the window. To plant a reserve, or superfluous row at top and bottom, is very advisable, lest any of the main plants should be eaten by the wire worm, which is often the case. After planting, the lights are immediately put on, and no air given in the first couple of days: as the plants begin to grow, air is given to the frames, as well at the bottom as at the top (about three inches), which is best performed by putting two bricks under each corner of every window; and this air may remain day and night for some time. At this period it will be found very necessary to search the beds every morning, if the wire worms have made their appearance; and where a plant is eaten, you will be pretty sure to find a worm under the root or in the surface, sometimes an inch deep or so: this is to be continued early in the morning every day till the insects disappear. In October, when the air begins to grow cold, and the heads of the cabbage lettuce begin to get close or hard, no air is given any more, and the lights are entirely closed; but it must be observed, that the leaves do not at all touch the glass, as, if they do, the least unexpected frost will hurt their edges and the consequence will be that the plants will rot. In this case the frame will have to be lifted every now and then. When the nightly frosts commence, generally in October, great attention must be paid to covering the beds with a single layer of bass mats; yet too much covering is to be avoided before the plants are grown to perfect heads. Water-

ing is quite out of the question, and even very hurtful; but care should be taken to prevent moisture as much as possible. Cover more or less according to the severity of the weather; and keep the lights uncovered in the day, whenever and as much as the weather will permit. By this treatment the Dutch gardeners produce cabbage lettuce during the whole winter till the month of April, when they are succeeded by the early forced.

I have followed this method for forty-five successive years in the Royal Gardens at Rosenburgh, but never so successfully as it is done in Holland. It depends greatly on the soil: a light leaf mould is considered the best, and it is not to be had in large towns. I know the Roman lettuce is preferred in England, but I suppose it is scarce in the winter; therefore it might be of advantage to some of your readers to get acquainted with a method of producing *salat pommé* (cabbage lettuce) in the middle of the winter.

P. LINDEGAARD.

ART. XVIII. *Notice of the Culture of Wheat in the Neighbourhood of Ardress, in Ireland.* By G. ENSOR, Esq., Author of *The Independent Man* and other Works.

Sir,

I AM induced to send you the following remarks, in consequence of seeing some lost crops of wheat this year in the Isle of Wight, from the mode of tillage in that wet land. The practice in my immediate neighbourhood, where the land is strong and retentive clay, is as follows:—Wheat is generally sown after potatoes, sometimes on fallows; in both cases the land is harrowed flat; then the plough superficially marks the ridges, which are sown broad-cast. The ridges vary from 4½ ft. to 5 ft.; the furrow 1 ft. wide, which is dug about 14 in. deep in thin spadefuls, and cast on either side on the grain. The furrows are shovelled as they are dug, one shovel to four spades. This practice has various benefits: less seed is required, all being on the same level, no grain being buried, none lost on the surface. It can be executed any day that men can work out; it deepens the land, and keeps land and grain dry during the wettest seasons. Ten men should dig and shovel an acre in a day. Perhaps I should add, that the furrow made by digging should be necked on either side the ridge; and the spade I speak of is the Irish spade.

I am, Sir, yours, &c.

Ardress, Loughgall, Sept. 19. 1830.

GEORGE ENSOR.

ART. XIX. *On a Method of forcing Strawberries.* By R. T.

Sir,

As I have just been preparing a quantity of strawberries for forcing, and as I have had an opportunity of trying all the different ways I have read or heard of respecting them, perhaps you will allow me to lay before your readers an account of my mode of culture. During the last few years the forcing of strawberries has very much improved, and a great many methods have been tried in order to find out the best to obtain a good crop. Since it is pretty well known that young plants force best and bear most, and that the stronger the plants are the more fruit they will bear, it is, of course, important to know how they may be obtained. Some people have planted the young runners as soon as they could procure them, in a shady situation, and then potted them in the autumn; others have potted them at once, and shaded them till they had begun to grow, and by this means have had tolerably good crops: but, though in wet summers, like the last three, runners are to be obtained tolerably early, yet in dry summers it is very difficult to have them soon enough to acquire strength before winter. The method I practise, and recommend to others, is this:—Some time in March, or in the beginning of April, take up of the last year's runners as many as will fill the requisite number of pots: but instead of planting them in a continued bed, as commonly practised, let them be planted in single rows around the quarters of the garden, and as much exposed as possible; by which means, instead of having weak drawn-up plants, with very small hearts to produce fruits, they will be strong and firm from exposure, and produce abundantly. Any time in September let them be taken up, with as much earth as will adhere to the roots, and potted in good loam; that from the old melon beds will do very well, with about one fourth of the old dung mixed with it. It is a common practice to put them three in a pot (size 32); but plants treated in this way will frequently be so strong as to allow of only one: this must, therefore, be regulated by their strength. I have sometimes planted one plant in a pot (size 48), and for early forcing I prefer it; as the fruit will soon reach the rim of the pot, and hang over, instead of lying on the damp mould among the leaves.

I forgot to state that, when the plants are taken up to pot, the leaves ought not to be cut off, except any very straggling ones.

I am, Sir, yours, &c.

Sept. 21. 1830.

R. T.

ART. XX. *Remarks on the Treatment of Fruit Trees.***By Mr. ROBERT ERRINGTON.**

Sir,

I HAVE just read with pleasure another soundly practical paper by Mr. Hiver, in your last Magazine, and must say I have for some time been very nearly of the same opinion, especially with regard to the too prevalent error of making deep and highly manured borders, and also of the necessity of a perfect admission of heat and light to the embryo buds to elaborate the sap; and I think it will not be long before these matters are admitted universally: but, as I think I can offer a few remarks on fruit trees in general, which have not come within the scope of Mr. Hiver's subjects, and which, nevertheless, I flatter myself may be of some trifling service to the uninitiated, I trust I may venture to do so.

I must first premise, that it frequently happens that a gardener, in changing situations, has to take to a lot of trees troubled with that vegetable plethora long since described by Mr. Hiver. I am one, and of course can speak feelingly. I have a wall of peaches, which produced such wood as Mr. Newington calls basket rods, and which I described to you in a former Number as having been planted in a very porous soil, in a highly manured state. What could I do? I was as sparing of the knife as possible, as far as shortening was concerned, leaving some of the shoots from 4 to 5 ft. in length, knowing they had a superabundance of sap, which would have vent in one shape or other; but this did not sufficiently avail. I therefore threw open a trench before them, and cut with a knife what I considered to be a just proportion of the deepest roots from them. The experiment has answered my best expectations. Now I have a wall of these trees, 240 ft. in length, which I could show against any, and which are that just medium between strength and weakness which is the true criterion of fruitfulness in many trees. I must here observe, that I thought it prudent in cutting to divide them at a tuft of fibres (as I thought it probable they would heal more quickly at such parts), and to spread those in a horizontal direction; and, I believe, by so doing there will be no danger of suckers: at any rate, I have none; and it is time they showed themselves, if the practice would create them.

I have since served two walls of pear trees in the same way, and some plums also, which used to make breast wood a yard from the wall. The result is, I have little breast wood now, and the buds are forming in an excellent manner for fruit; and I must say, that this method appears preferable to all the

ringing manœuvres of the day. With regard to the quince stock for pears, I can hardly agree with Mr. Hiver in this matter. He seems to make disease a necessary consequence of poverty, which I have yet to learn. I know that many injurious effects will follow from poverty in trees, but I am not aware that disease will of necessity. I think with him, that it is far better to manage them by the border; but I know also that some kinds will do well on quince stocks, and, I believe, last for many years: but these, in my opinion, should have a little deeper and better soil than the free stocks, and the strong-wooded and shy-fruited kinds should alone have the quince. By the way, are quince trees liable to premature decay? If not, why should the pears be so when worked on them? I know it is difficult to get them on this stock in the nurseries, because they will not produce wood fast enough, and strength of wood is to many the only criterion to judge by. As for pruning, I am convinced it is ridiculous to depend upon any system to produce fruitfulness in pear trees; and should rather view it in the light of an operation forced upon us by limitation, and the necessity of light and air to all parts of the tree. As for young trees, a year or two after planting, if too luxuriant, how easy and efficacious it is to take them up and replant them! But this, of course, as well as cutting the roots, presupposes errors in the border formation. It is strange, yet notorious, that young trees are often started, as it is called, in the richest of soils; while, in the same garden, we see trees exhausted with long and hard bearing suffered to starve by inches, as though the benefits of mulching or top-dressing were not known or admitted. By mulch I do not mean the highly fermented manure of the melon ground, which has lost some 60 per cent of its qualities, and has little besides bulk and blackness to recommend it; but animal manures, prepared on just chemical principles (I hope the term chemical will not give offence to any). Now, I do not contend that this is to make a tree live for ever, but that it is applicable in numerous instances where it is too commonly omitted. I think it probable that bone would be highly eligible for this purpose; and I wish some of your scientific correspondents would give us a tabular analysis of all the principal fruits and vegetables, showing us the relative value of their constituents, that we might be able to apply our manures accordingly: for, if I am rightly informed, the nitrogen of animal substances is only taken up by a few, and then in limited degrees. But here I am out of my depth.

Another word on deep borders. I consider half the diseases (commonly so called) of fruit trees referable to this very

point, and feel confident it keeps the branches of most kinds of fruit trees growing late in the summer, when the ripening process should be going on; and the result is, they are frequently overtaken by the frost with their leaves in a green state, when an imperfect developement of their buds and blossoms is, I believe, a sure consequence the next spring. I have little doubt it is the chief cause of that defect in the ripening of grapes so often complained of. If vines grow and bear well in warm regions on shallow banks with a rocky substratum, why give them such enormous depth in a colder climate? As for ridging borders, cropping them (unless of necessity), and some other manœuvres, they can, in my opinion, be very well dispensed with: stirring the surface with the points of a fork, for the free admission of atmospheric assistance, will, I believe, do all that is requisite.

I am, Sir, yours, &c.

ROBERT ERRINGTON,

Oulton Park, June 20. 1830.

ART. XXI. *Farther Remarks on training the Peach and Nectarine.*
By Mr. R. ERRINGTON.

Sir,

I WROTE to you some time since (p. 693.) on the subject of cutting the roots of trees to induce fruitfulness; and I have since read in Mr. M'Intosh's work that this method had been tried in Scotland (I think at Lord Mansfield's garden), and with great success. Of this I was not aware when I wrote the paper in question; and as my observations thereon, to those acquainted with the matter, would appear preposterous, and might be construed into a sort of claim to novelty, I am induced to request you will destroy the paper in question, and, if necessary, I will most willingly furnish you with any particulars relative to the trials quoted at any time, especially as I am convinced it is the most eligible course that can be taken when borders have been made on wrong principles. I beg again to affirm, that no writer in the Magazine (in my humble opinion) has hit upon the prevalent defects in this affair so aptly as Mr. Hiver (a man I never yet saw), whose first paper on pear trees is, in a great degree, applicable to most fruits, &c., and should be printed and set up in every kitchen-garden in the country.

I now wish to say a few words more about peach and nectarine trees, as I find there is something concerning me in Mr. Seymour's paper in your last Number. I am aware that quite

enough has been said on the subject; yet I trust you will allow me to vindicate what I had before written, which, I perceive, will be liable to misconstruction.

In Mr. Seymour's paper, I observe, he remarks that his young trees are growing in a soil nearly like that complained of by me. I wish he had said how nearly. Has he the same proportion of dung in the soil? Is this soil as sandy as I described mine to be? Is his subsoil as porous and dry? And does he desire excessively luxuriant wood, as a matter of choice? I beg to repeat that my trees not only made the basket-rods (as Mr. Newington calls them) in the centre of the trees, but to the very bottom of the wall; and those shoots averaged in length 3 to 6 ft. Now, the trees having been planted 6 yds. apart only, and the wall being 10 ft. high, I remember saying it was difficult to know how to prune them to provide a nice succession of wood: and so it was; for pruning could not effect what I required, as the extremities of the shoots had already met in many places. Now, I intended to move them all and place them farther apart, but I was requested by a proper authority not to do so; therefore I will describe what I did. I opened a trench before them, at about 6 ft. from the wall, and cut a just proportion of all their straggling roots at a tuft of fibres, which I combed carefully out in a horizontal direction, and replaced the soil. I then removed about 6 in. in depth of the part of the border between their roots and the walk, and dressed it with 6 in. of fat turfy loam, forking it in, and mixing it with the sand 2 ft. deep. Be it remembered, I was placing this fat loam on a bottom exceedingly dry and porous; and those minutiae must be borne in mind by our critics, for I beg not to be understood as recommending stiff soil on a retentive subsoil. However, to proceed, I cut the trees, leaving every luxuriant leader, just as Mr. Seymour recommends (although I never heard of his system), nearly its full length; having also reserved a pair of laterals in the summer (disbudding towards the base of each luxuriant shoot), and in some exceedingly luxuriant shoots, two pairs. Other wood of a weaker character, and nearer home, I pruned a little closer. I have now to state, that I will show that wall of trees (240 ft. long) against any of the same age; and for symmetry, equalised strength, a just medium degree also, and complete succession of wood without any nakedness, I think they cannot be surpassed. I now beg to offer a few remarks on what I humbly conceive to be either erroneous or immaterial, in plans proposed by a few writers in the Magazine latterly; and hope to give no offence by the liberty taken, as I shall most willingly, in my turn, submit to the lash.

Mr. Newington's plan of managing a crop of young spray I entirely disapprove of, as being unnecessary. It might, in trees of a very moderate strength, in the warmer parts of England, answer what may be called decently; but, for the majority of gardeners, I feel convinced it would not be the best plan: its evils would be confusion of wood, and, in the end, too great exclusion of light and heat. Nevertheless, I think Mr. Housman under a mistake in saying it might do for luxuriant wood: for, if he taxes his memory, he will remember that the lowest joint of laterals on very luxuriant wood is generally very long, perhaps from 1 in. to 6 in.; and such wood, if topped, would seldom make bloom spurs. However, I may misunderstand him. I protest against any very punishing crops, as onions or shallots, on the borders, the roots of which run 18 in. deep. The most legitimate crop I know for the purpose, in my opinion, is the strawberry, on account of that mortal enemy to surface roots, the spade, being so little required in its cultivation. These I would plant in rows 3 ft. apart, leaving a space of 6 ft. next the wall, on which the runners of the respective kinds would extend without mixing, especially by dressing that space in April with leaf mould. They would be rooted early, and ready to clear away in the end of July with the trimmings between the rows. I would plant a portion every year, and after bearing the second time, destroy them. For these borders I would have a net made, which should fit a given number of rows, and I would cover them over with it at ripening time. By these means, and mouse-traps round the exterior, the crop would be as secure as the cherry orchard at Hylands. For, plant how we will here, unless they are covered the birds will have at least half. As crops intermitting between the strawberries, I would advise, with Mr. Housman, spinach, radishes, French beans, endive, lettuce, dwarf peas, pickling cucumbers, remembering always to crop rather thinly; and if any of the borders could be totally cleared through July or August, I have no doubt it would be an advantage. These borders should be always worked with a fork, and not more than 6 or 8 in. deep, if possible; for I think it of more importance to preserve surface roots than to attend to those punctilios about mignonette, &c.

I now beg to say, after finding all the fault I can, that all those papers have their merits: at any rate, it is agreeable to see so much testimony from various quarters contrasted.

Let those who judge, therefore, bear in mind that almost every situation has its peculiarities; and let us not be condemned without those localities being taken into the question.

I should not have scribbled so far, could I have compréssed my subject more without mutilation: I must, therefore, ask pardon for its defects, and for the digressions I have made; and shall make up my mind to expect a scolding for my pains, if this be inserted.

I remain, Sir, yours, &c.

Oulton Park, Sept. 1830.

ROBERT ERRINGTON.

ART. XXII. *Mr. Alexander Diack's Mode of grafting on the large Branches of old Trees, as extracted from the Books of the Aberdeenshire Horticultural Society.* Communicated by Mr. A. DIACK, C.M.H.S.

Sir,

It is with no little degree of surprise that I see announced, in some of the periodical publications for this month, and also in some of the newspapers, as being extracted from the *Transactions of the London Horticultural Society*, a method of grafting on the large branches of old trees, the merit of which is claimed by Mr. Malone, gardener to G. S. Foljambe, Esq., of Osberton House, Nottinghamshire. I do not know how long Mr. Malone may have been practising the method; but this much I can tell you, that previously to the year 1826 I myself followed the same practice, and in 1827 laid before the Aberdeenshire Horticultural Society a detailed account of my method and success: a copy of which paper I forwarded to the London Horticultural Society, by the advice of Alexander Seaton, Esq., one of the Council of the said Society, who visited my grounds in the month of May of that year; and I find the same noticed in your Magazine for December following, as having been read before the Council of the London Society. I may just mention, that my plan has been adopted by several experienced gardeners in this neighbourhood with the most complete success, particularly Mr. Stevenson, late gardener to Charles Bannerman, Esq., of Cremonmagate, upon a number of standard and wall trees in his orchard. Will you, therefore, oblige me by sparing a corner of your valuable publication for the following account of my process, which is nearly the same as that by Mr. Malone? It is extracted from the books of the Aberdeenshire Horticultural Society, under date of August 28. 1827, and is in substance that which was sent to the London Horticultural Society.

I am, Sir, yours, &c.

ALEXANDER DIACK, C. M. H. S.

Mile End, Aberdeen, March 13. 1830.

“ To the Secretaries of the Aberdeenshire Horticultural Society, Aug. 28. 1827.

“ I beg leave to submit to your consideration a mode of grafting upon old stocks, branches, &c., of any size. The method is simply this: — Having headed down your tree, take a scion and place it upon that part of the stock where it is meant to insert it. Cut upon both sides lengthways, through the bark to the wood, an inch or more long, directly opposite each other; then cut across between these at the bottom, observing to have it rather too little than too much. Raise now the bark between the incisions, by a bone or ivory wedge, or the handle of a budding-knife, &c., as most convenient; which will be easily done, as the wood and bark will easily separate when the sap has arisen, when the void will appear as a mortise. Prepare now the scion, as in the common way for whip-grafting, by cutting away one side; then paring away the rind or outer bark on both sides of the transverse section, making the lower end square; so that, when placed in the mortise, it may fill the place exactly as a tenon, the end uniting closely with the bark of the stock.

“ Tie now with matting in the usual way, observing that if there is a vacuity between the scion and bass, in consequence of the bark of the stock being thicker than that of the scion, it will be necessary to place something above that part of the scion, so as the void may be filled up, that the tying press it tight. If the operation is performed on branches rather *low horizontal*, clay is to be preferred as a plaster; if above, pitch, &c. (or grafting wax), in case capillary attraction is necessary. By capillary attraction, I mean having a bottle or jar for the purpose of holding water; a bit of cord or narrow selvage of cloth, from 24 in. to 36 in. long, as a conductor, the one end immersed in the water, and the other end turned once or twice round the scion; the vessel for the water to be filled as often as necessary. By this mode I have no doubt that cuttings, even from America or India, if kept moderately moist (damp) on the passage, will in most instances succeed.

“ In the latter end of the month of March last, a cutting of a new particular pear (Duchesse d'Angoulême) was sent me from the Horticultural Garden of London. When received, the buds were 1 in. long, and perfectly blanched from the lateness of the season, and the package having been in damp moss. I cut the shoot in two equal parts, and wrought them in the manner above described. The buds in the course of a day became quite black, and died away; I had then recourse to capillary attraction. By the first week in May, the top or

uppermost part began to push from the *side* where the former bud was; and about the middle of June the lower part also.

“This operation, to be denominated *mortise-grafting*, has been witnessed by the secretaries of our Society at different periods of the season; and the same method was pointed out to Messrs. Stevenson and Fraser, the former of whom, to my knowledge, has adopted the plan with equal success this season.

“To the size of your stock may be proportioned the number of your scions, say from half an inch to as much more as you please between. When capillary attraction is had recourse to, it will be most advisable to use the pitch composition, as the constant current of water loosens the clay.

I am, &c.

(Signed)

ALEX. DIACK.

Mile End, Aug. 28. 1827.

Read.”

ART. XXIII. *On keeping Fruits, more particularly Apples.*
By JOHN FERME, Esq.

Sir,

THERE is no subject upon which there seems to be more diversity of opinion among horticulturists, than what is the proper mode of preserving apples and pears through the winter months; and considering the importance of ascertaining, upon scientific principles, the means to be adopted for attaining this desirable object, it is to be wondered that the matter has not been taken up by some one qualified to explain the causes of the good or bad success attendant on the experiments which are yearly made. In the *Transactions* of the London and Caledonian Horticultural Societies, as well as in other publications, numerous papers occur, stating the successful result of experiments conducted by respectable individuals; but, when these are compared together, the means adopted to obtain the desired end are generally found to be so various and dissimilar, that, in the absence of some theoretical reasoning to enable the reader to form his own judgment, no proper conclusion can be arrived at, and every one follows his own method. In premising these observations, it is not my intention to offer any theory on the subject, which both my ignorance of chemistry and want of opportunity for experiments preclude me from attempting; but I wish to call the attention of your numerous contributors to the question, and I hope to see it handled in some of your future Numbers. In my small experience, however, one thing has occurred to me,

which, I rather think, is frequently lost sight of by many persons who have, like myself, but a small quantity of fruit, and but indifferent accommodation for its preservation, viz. the cause of *shrivelling*, the most common way in which apples and pears decay, is not so often from the fruit being gathered in an immature state (a mistake which few persons will twice fall into), but from the too dry state of the air of the place where they are deposited, and the position in which they are placed allowing such dry air to operate too freely on them.

When fruit, however mature and finely ripened, is exposed in a dry apartment, and laid singly on open sparred shelves (as is often practised), the action of the air speedily extracts the juice from them; and in the month of November and December, Ribstons, Nonpareils, and other fine apples, and the better kinds of pears, which should remain in good condition for several months after, become shrivelled, and the pulp stringy, unpalatable, and undigestible. Packing in jars closely cemented or sealed up I have found to prevent this, where it is unavoidable to deposit fruit in a dry apartment; but such a state of atmosphere as is rather moist, without the place itself being absolutely damp or wet, I conceive to be most favourable for the fruit retaining its original freshness in: and as many persons have cellars at the surface of the ground, or a little below it, who have no regular fruit-rooms, my experience would induce me to advise them to store their fruit in a corner of the former, in preference to dry presses and closets in higher flats of the house. As an example of what I am advising, I may mention, that a lady of my acquaintance, whose garden produced annually a considerable quantity of fine Ribstons and Nonpareils, has been anxious for several years to preserve them till spring, and last year complained to me that, with all her care and attention, she was unable to effect it, as the fruit invariably shrivelled before the end of the year. On inspecting the place where it was kept, I found it a dry closet on the second floor of the house. I advised her this year to deposit them in the cellar, which is several feet under the surface; and I was agreeably surprised, some days ago, to be shown specimens of Ribstons and Nonpareils preserved in both places: those from the closet shrivelled and skinny; those from the cellar as fresh as when pulled from the tree.

I know not if these unconnected observations may be worthy of a place in your pages; but from the apple and pear being (as you justly observe in your last Number) the food of the middling and poor classes, and more generally useful than any other, I hope, at all events, you will call the attention of your correspondents to the subject. I am, Sir, yours, &c.

Haddington, Dec. 16. 1829.

JOHN FERME.

ART. XXIV. *On the Culture of the Newtown Pippin Apple.*
By Mr. JAMES BRIENT.

Sir,

I TAKE the liberty of submitting to you the subjoined hints on the culture of that celebrated American apple called the Newtown Pippin, which as yet, unfortunately, has but slightly shared that portion of attention which so strongly characterises the age. Little short of three years ago, my attention had been much engaged respecting its culture. It then occurred to me, that the chief part of North American soils was a mixture of a part decomposed peat and vegetable leaf mould, which induced me to try the following imitation: one part peat earth, one part decayed vegetable leaf mould, and half a part loam. To each tree were applied four barrowloads of the above mixture; the holes for the trees were previously opened, and the old standing soil dispersed; the bottom of each allotment was well drained, and the trees planted as above. The annual growth made by the trees far surpasses any thing of the sort I have ever witnessed; nor has their vigour prevented their bearing fruit the second year, much finer and larger than ever before perceived by me: which fruit bears a strong affinity to the Ortley apple described by Mr. Michael Foy of New York (See *Trans. Hort. Soc.*, vol. vi. part iv. p. 409.), and probably is the same fruit as the Newtown Pippin; which latter is very different in size and colour when grown in our common soils. At all events, it is sufficient to remark, that not only the other American apples, but the fine long-decaying varieties so nearly extinct, will be found ulteriorly to revive in the above mixture; which would, if triennially applied around the exterior roots, enable the trees to continue vigorous; and, moreover, do away with the adhesive companions the canker and blight; more especially, the *Aphis lanatus* would seek for its abode a more salutary habitation. As a farther testimonial for it, the above assertions may be personally proved by seeing the objects, which surpass the eulogy bestowed on them in this paper.

I am, Sir, yours, &c.

May Place Gardens, Sept. 1829.

JAMES BRIENT.

ART. XXV. *Notice of a Citron Tree in the Gardens of Castle Semple.* By JOHN HAY, Esq.

Sir,

THE gardener at Castle Semple observing that specimens of particular fruits were acceptable to you, proposed to Major

Harvey to send for your inspection a citron, produced from a large tree growing in his garden at that place. To this he readily consented; and intends sending it under the care of his eldest son, a young gentleman returning to school, after the Christmas vacation, in the vicinity of London. Major Harvey and family being at present residing in Edinburgh, the fruit was sent here. As the tree has been a good deal under my observation and directions, I proposed to the Major to send you a short account of it along with the fruit, which is the principal reason for my troubling you at this time with these lines.

This citron was planted in the old garden (now removed) in the summer of 1818, in a small glazed apartment connected with a conservatory; the back wall of which was 16 ft. high, flued, and covered with a trellis on which the tree was trained. The soil was a rich brown loam, mixed with more than one half of rotted leaves. It grew in this situation luxuriantly; and in three years overgrew the house. In consequence of which, measures were taken to train one side on the back wall of the conservatory, where it produced some fine fruit, but was more inclined to grow than show flowers.

A new garden having been determined on, to be erected at a considerable distance from the old one, it became necessary to remove the buildings, and, among the rest, the house that protected the citron. Being desirous of having this valuable plant preserved and carefully transplanted, I, accordingly, in the end of autumn, 1824, caused a strong box (4 ft. square and 3 ft. deep) to be built around the root, every plank being well secured at the corners with strong iron bands, and the sides otherwise well bound together; the space between the ball containing the roots, and the sides of the box being filled up with earth, and made very firm. The plant was then undermined, so as to get in the bottom of the box, piece by piece: these were fixed to the sides by strong kneed irons, slipping under the bottom and made firm to the sides; and the whole was supported by a series of brick pillars built under each plank, forming the bottom of the box. The earth was now filled in and levelled; and in this position the plant stood till the 12th of August, 1825. The new garden was founded about the middle of March in that year; and when the wall of the orangery, which is flued, was finished, and a wooden trellis put up, the tree was removed from the old to the new garden; and being set down in its place, the sides of the box were taken away, and the bottom left under the roots; soil of the same quality as it originally grew in was carefully put round it. The house was then founded and erected over the plant; and, when

finished, the tree was laid neatly to the trellis, filling the whole of the back wall, 25 ft. long and 16 ft. high. In the spring and summer of 1826, it showed abundance of flowers, which were all cut off as they appeared; in 1827, it put forth a greater abundance of flowers, a few of which only were left to produce fruit: and in 1828, it was allowed to bear a full crop. It has been under the management of Mr. Alexander Lauder for the last three years; and, for its progress last year, I transcribe from Mr. Lauder's letter to me, of the 18th of January instant:—

“The citron tree covers the whole of the trellis on the back wall of the orange-house, with branches on each side extending about 6 ft. round the ends. It produced between seven and eight dozens of fruits last year; about four dozens were full-sized, the remainder were taken off when half grown; besides a great quantity taken off when about the size of a common orange; and under: only four of the fruits were allowed to ripen, the others were taken off green for preserving. The tree is in very good health: a number of last year's shoots are from 7 ft. to 8 ft. in length.”

I am, Sir, yours, &c.

Edinburgh, Jan. 22. 1830.

JOHN HAY.

THE citron sent measured $18\frac{1}{2}$ in. in circumference one way, and $19\frac{1}{4}$ in. the other. — *Cond.*

ART. XXVI. *Mr. C. Hale Jessop's Mode of cultivating the Enville Pine.* Communicated by him to the Vale of Evesham Horticultural Society, at a Meeting of which on Sept. 25. 1828 it was read; and sent by the President of that Society to the Gardener's Magazine.

I HAVE sent an Enville pine, raised by retaining and fruiting the suckers attached to the old stem or mother plant, well situated near the bottom of the parent plant.

In September take off some of the leaves about the base, to favour the emission of roots; then potting deep the suckers attached to the stem and roots of the old plant. This mode is, I think, well adapted for the tardy fruiters, and will insure fruit annually which will give the same weight of fruit, and better-flavoured than others fruiting at three years old. From the plant that produced the fruit herewith sent I cut a fine handsome fruit last summer, and which, at 10s. per lb., produced 1l. 17s. 6d., weighing 4 lbs. all but 4 oz. I have now a fine sucker, rising from and on the mother plant of 1827, which bids fair to produce such another fruit for next year..

ART. XXVII. *On growing Pine-apples in Moss.* By M. JACOB SEIMEL, Head Gardener to the Count Montgelas, at Bogenhausen, near Munich.

Sir,

WHEN you lately honoured the gardens of Count Montgelas, at Bogenhausen, with a visit, you expressed a wish that I would communicate to you, in writing, my method of raising pine-apples in moss. I am happy to have it thus early in my power to comply with your request; and you may be assured that the statements I am about to make are the genuine results of twelve years' experience and observation.

Of the Gathering of the Moss, its Treatment and Mixing.—The moss (*Hypnum spec. div.*) is gathered in the months of September and October in the woods, and chopped small at home with a hatchet, or cut like chaff, after which it is laid up in a broad heap in the open air. About four English bushels of horn shavings, or more, are added to every two-horse-load of moss, and well mixed with it; after that the heap is left undisturbed till the following spring. In the first fine days of March, the moss thus mixed is spread in the air, in order to get it tolerably (but not thoroughly) dry; after which it is put under cover to prevent its getting damp again.

Of the Transplanting of the Pine-apples without Balls.—The pots are chosen in proportion to the size of the plants, but they are generally larger than when the plants are to be potted in earth. The apertures at the bottom are, as usual, covered with bits of earthenware, after which the pots are filled in the following manner:—We first put in the prepared moss to the depth of three fingers, which is well rammed down, and then thinly covered with manure, salt, or saltpetre. This is continued alternately till the pot is rather more than half full; after which a cylindrical piece of wood, of from 2 to 3 in. in diameter (according to the stoutness of the plant), is placed upright on the moss in the pot, and the latter is then filled to the top with the same substance, with thin sprinklings of salt between the layers as before. The wood is then taken out, and the hole partially filled up with fine good mould. The number of pots thus prepared must be the same as that of the roots to be transplanted.

The propagation of the pine-apple is effected, as it is well known, either by the setting of the sprouts or suckers (proles), or of the crowns (coma).

The suckers are separated from the mother plant by being torn off, after which the fibres which appear in the place where they have been attached are trimmed with a sharp knife, and

the sprouts left three or four days on a board to dry in the hot-house. If the individuals are tolerably strong, the scaly leaves at the trunk are taken off, for the purpose of giving a better opportunity to the new roots for spreading themselves.

The crowns are also freed from the fibres at the lower end with a knife, and also dried in the hot-house; and, if necessary, some leaves may be cautiously taken from them at the base. But if it is wished to transfer into moss young or old plants which have taken root in the earth, the mould, on their being taken up, is shaken off, the roots closely cut off the stem (stipes), and the stem cleared of dry leaves, and also of some green ones; which, however, must be done with care. If the stem is too long, or dry or rotten at the base, it must be shortened, and the rotten part cut out. This kind of plants must also be dried in the hot-house like the former.

On transplanting any of the stems, they are placed into the aperture left in the moss, the interstices filled up with fine rich mould, and the whole pressed firm, so as to make the plant stand upright. When the planting is finished, the pots are placed in the pine-apple pits, in a tan bed previously prepared, treating them in the usual manner. I have observed, however, for several years, that pine-apples grown in moss are not so sensitive as those which are grown in earth, and bear watering better; by this, however, I do not mean to say that they are to be kept absolutely wet. Besides being watered, the plants should also be moistened with the following preparation: —

In the month of March I put into a cask, holding about two hogsheads, two bushels of cow-dung, one peck of horn shavings, and from 20 to 24 quarts of bullock's blood, filling the remaining space with water; and I leave it for three or four months to a voluntary fermentation, causing the liquid to be well stirred up about once every week.

Use of the Liquid. — At the end of those three or four months the fermentation will have been completed, and the liquid may be applied to the pine-apples towards the end of May or the beginning of June, and again in September and October, under the following regulations: — When the moss in the pots had got properly dry, I watered the plants copiously with this liquid stirred up, and afterwards each individual plant with clean water, in order to distribute the former equally among the pots. I only used the liquid once, employing water at other times. I used this liquid again in September or October, also for once only, and then again used pure water.

By this method my plants grew rapidly, having fine green

leaves, and large fruit of from eight to twelve berries, of a fine aromatic taste, much more juicy than those which are grown in mould.

Of the Transplanting of Pine-apples with the Balls. — If it is wished to transplant such roots as have been grown in moss, pots of a proportionate size are again selected, which receive a substratum of the mixture of moss and horn shavings, as described before, rammed in in the same manner. The pots with the plants are then turned over, the latter taken out with the balls, freed from the dry or superfluous green leaves, placed on the substratum in the pot, and the interval between the ball and the pot filled up with the moss mixture, which is properly pressed down, salt having been introduced between the layers as before. It is, however, to be observed, that the plant must always be sunk into the leaves, and no part of the stem beneath them remain uncovered. The sinking of the pots, and the watering, airing, and shading of the plants, require no description.

I must, however, mention a useful observation which I have made. In order to simplify and shorten the other process, I planted the pine-apples this year in March, in a soil prepared of improved loam earth, dung-bed earth, brook slime, and horn shavings, which had such an injurious effect on the plants, that the leaves lost their fine green colour, and faded, and the roots did not show themselves till August, after which the plants certainly again recovered.

But whether this was occasioned by the transfer of the plants from moss into earth, or by the lime which is contained in the two latter kinds of earth, I must find out by farther experiments.

I am, Sir, &c.

JACOB SEIMEL.

Bogenhausen, near Munich, Nov. 23. 1828.

ART. XXVIII. *Observations on the Management of Vines in the Pinery.* By Mr. GEO. FULTON, Gardener to Lord Northwick. Read at the Vale of Evesham Horticultural Society, Sept. 25. 1828.

THE high estimation in which the finer kinds of grapes are held, and the different modes of cultivating the vine in the present day, form an inducement (after considerable practice) for me to state my method, which, although not quite new, may perhaps be regarded as an improvement on the general mode of cultivation.

I prefer raising the plants from eyes of vines to every other mode of propagation, as they root better, are short jointed, and bear more abundantly than by any other method I have adopted or seen practised.

In making a suitable preparation for vines, I agree in the opinion with many, that a good loamy soil, of not too binding a nature, with a considerable proportion of vegetable mould and old tan, is very good for the purpose.

But, with respect to the depth of soil outside of a forcing-house, I am of opinion, that it is an error to prepare a border 3 or 4 ft. deep (as it is often done) : I would rather recommend from two to three, for various reasons. The first is, I believe, a well grounded general opinion, that sun heat penetrates only 3 ft. into the earth ; therefore it can be of no use to cause the vine, or any other tree with fibrous roots, to extend them downwards out of the influence of solar heat, except where accidental situation, or other causes, may render it necessary.

Secondly, my practice is to plant shallow, that I may be enabled to add to the border whatever kind of soils or manure I think proper, either in summer or winter : I find this of great use in strengthening the vine, and insuring permanent crops of fruit.

The practice of growing vegetables or flowers near the roots I decidedly disapprove of, not only as shading, but, what is of greater consequence, on account of the actual wearing out of the border from the above manner of cropping it.

To have an attentive eye to the young shoots at an early period of their growth is of great importance ; and, to procure round short-jointed wood, my practice is to keep a low temperature in the night, and a very high one in the day. Vines by such a mode of treatment are not excited in an unnatural degree, and nature is more imitated than exactly followed, which may be said to be the main principle in the art of forcing.

I have frequently in the spring months had the mercury in the thermometer stand at 110° in a pinery early in the day, when, with abundance of moisture, vines have grown very rapidly with round short-jointed, instead of flat long-jointed, shoots, caused by an extreme of fire heat in the night. The observations already made I wish to be understood as applicable to pines as well as vines, where they are necessarily grown together.

It may also be proper to remark, that the well constructed copper-roofed forcing-houses at Northwick Park are no less a credit to the taste of their noble owner, than a great recommendation to those who erected them. I consider metallic hot-houses as forming one of the greatest improvements in

horticulture in my time for fruits and flowers; as they are not only light and durable, but the advantages that can be taken of sun heat to swell off the finer kinds of grapes are very great.

With respect to pruning, my practice is to spur the common kinds, or cut them to one eye; the muscat and others of the finer sorts I find succeed best when the shoots are laid in at four or five: if left longer, they only break a few eyes at the extreme part of the vine; and if cut to one or two, they generally shoot strong without much fruit. This particularity observable in the above kinds, no doubt, proceeds from their being greatly excited by heat, water, and other causes, where so many artificial means are used to vines kept constantly in a pinery.

Much has been said and written upon the shrivelling of grapes in hot-houses and vineries: I am of opinion that it proceeds from a combination of causes.

The first is evidently too great a crop, as there is only a certain number of bunches, or proportional weight of fruit, the vine can sustain or bring to perfection; and this can only be known from long practice, and a study of the natural habits of the different kinds.

Secondly, a deficiency of heat, when the berries are swelling, particularly checks the Frontignac kinds both in fruit and wood. A difference of opinion still exists among practical men respecting wintering or taking out vines in forcing-houses. My practice is, to take out only the branches of those which are planted outside, and let them remain out from November until March: if put in sooner than the returning warmth of spring, it cannot be expected that they will bear good crops, and this is, in my opinion, one great cause of the frequent failures of fruit.

Where very early crops are wanted, such kinds as the sweet-water, muscadine, &c., should be planted within the house. A proper selection is too seldom made: hence the cause of failures of fruit, and disappointments to all parties connected with the cultivation of grapes.

ART. XXIX. *On keeping a fine Bloom on Cucumbers.* By Mr. GEO. FULTON, Gardener to Lord Northwick. Read at the Meeting of the Vale of Evesham Horticultural Society, June 24. 1828.

THE art of producing and keeping a fine natural bloom on cucumbers, either for a gentleman's table, for show, or for the market, merits great attention, both as to the perfect appearance of the fruit, and also to the general culture of the plant

after the fruit is set. From that time a strong bottom heat should be given with dung linings; or, if late in the spring, short grass laid round the frame on the dung will cause a very strong heat. Water ought then to be given plentifully, always at the back part of the frame; and at no time should the plants be watered over their leaves, when the fruit is wanted for its fine delicate bloom and long regular shape. A fine foliage over all the bed is also a very essential point; and leaves should never be picked off near the fruit (as too often done), as it thereby deranges the juices of the plant, and consequently the fruit does not swell off finely. Air also should be given very sparingly in the middle of the day, even in bright sunshine, and generally there should be a little left in the night, when the bottom heat is very strong, as by that means the air in the frame is kept sweet. When the fruit is fit to eat, for any of the above purposes, great care should be taken to pack it in narrow wooden boxes, in the largest stinging-nettle leaves that can be got, filling up the interstices with well-thrashed moss, and covering over with soft leaves of any kind. It may then be sent to a great distance with a fine bloom, and, upon the whole, in a perfect state.

ART. XXX. *On the Culture of the Strawberry on a light sandy Soil.* By THOMAS FLEETWOOD, Gardener at Donnington. Read at the Meeting of the Vale of Evesham Horticultural Society, July 24. 1828.

HAVING heard many persons complain of the unproductiveness of strawberries on light sandy land, and having long observed their deficiency in bearing in soil of this description, my attention has been directed, during the last eight years, to the improvement of their cultivation, by changing the nature of the soil by the use of different composts. In every instance in which marl did not form part of the compost I have been unsuccessful. The plan of culture I would recommend is the following:—After manuring the ground with dung and soft marl, and digging them in well, I take the first plants that grow on the runners, and plant them in four-row beds; the rows 16 in. apart, and the plants 12 in. from each other in the row. If planted in September, or early in October, and watered and shaded, they soon take root, and generally bear well the first year.

After the beds have been well cleaned the last time in April, and before the runners begin to grow, I cover them

1½ in. thick with soft marl, for the young plants to grow in. As soon as the first plants on the runners have taken root, I cut off the runner an inch above the plant so formed, by which its strength is considerably increased. On all light sandy land I have found the strawberry most productive by allowing as many of the young self-planted roots as will cover the beds to remain, and the fruit is also much cleaner than when the roots are single. When the young plants are firmly established, all the old runners and leaves should be carefully cut off, and the ground kept clean by hand-weeding.

By the above plan strawberries may be successfully cultivated among new plantations of gooseberries and currants. If the bushes are in single rows, one row of strawberries on each side of them will be sufficient; but if in beds, then two rows on each side, and the path may be made in the centre of the bed between the bushes.

ART. XXXI. *On the Management of the Hautbois Strawberry.*
By FRAGARIA.

Sir,

HAVING this year had an opportunity of visiting the gardens of several gentlemen within thirty miles of London, it is my intention to employ a small portion of my time in making some remarks on the treatment of those kinds of plants which appeared to me not to have received the attention they deserve.

My method of treatment, which differs from those I have lately seen, may not be new to many of your able correspondents, but that it is so to a great many I am certain. Like your much respected correspondent Agronome, I must for a considerable time conceal my real name and address; but perhaps, also, like him, I may at some future time be able to give it. Whatever opinion you may form of my humble endeavours, yet if it be true that there is some good to be learned from every fool, perhaps there may be an individual who, like myself, may be much informed by reading some of the most trifling things in your miscellany. At any rate, whatever treatment this or any other communication may receive at your hands, it cannot, of course, affect my interest; so that you are at liberty to do with them just as you please.

The first thing I shall trouble you with is the management of the hautbois strawberry. That those people who know but little of gardening, and less of the nature of plants to bear male and female flowers on the same or different plants,

should not have observed this variation in the hautbois is not to be wondered at; but that so many gardeners should be either ignorant of it, or so indifferent about it as to make no difference in its cultivation, is surprising. I am aware that some will be ready to say, as others have said, that they frequently had good crops of hautbois, without taking any particular care as to the selection of their plants. I have also seen the same in a kind season, and where the plants have been accidentally mixed: but where this has been the case once, I have many times seen rows of plants with scarcely any thing but males; on the other hand, I have seen beds almost composed of female plants, which, though they may have been impregnated for some distance round the males, yet have not been productive of half a crop. The best way I have been able to discover to insure a good crop (as far as cultivation is concerned) is as follows: — In the spring, as soon as the plants are in flower, mark out a piece of ground about two yards square, as that will, with care, produce plants enough for extensive plantations; this must be done by cutting an alley between them and the other part of the bed, which must always be kept clear of runners, in order that they may not mix. This done, look well over your plants, and pull up all the females; and when you have retained a sufficient number of males to occupy the ground, pull up all the others, as there are frequently plants which do not flower, and which, if permitted to remain, would afterwards mix them. Now, let another piece be marked out for the females, pulling up all the males, and leaving none but such as have fruit or fruit blossoms on; out of these two pieces all future plantations are to be made in the following manner. About March, plant out in beds of three rows, each eighteen inches apart, and one foot from plant to plant in the rows or in the borders round the garden, of the same width. Let the two outside rows be planted with females, and the middle one with males. The ground this year may be sown with seeds, or planted thinly, and next year (unless a very bad season) it will produce abundantly. They may either be continued a year or two longer, or planted every year from the two beds first marked out. I prefer the latter method, especially where ground is scarce, as the ground thus occupied may always be planted with something else, except the spring they are to bear fruit; whereas if the old beds remain they cannot be cropped at all, and require a great deal more time to manage than it will take to plant new ones.

I remain, Sir, &c.

September, 1830.

FRAGARIA.

PART II.

MISCELLANEOUS INTELLIGENCE.

ART. I. *Varieties of British Plants cultivated and sold by Mr. James Smith and Son, at Monkwood Grove near Ayr.* By Mr. SMITH.

... THOSE marked with a star (*) I consider the rarest in the list. I have added four or five names, as in my manuscript, for want of better authority. I would have sent specimens of several of the varieties, and of those named on my own authority, but could not by the present conveyance: if you think them worth seeing, after receipt of your answer I will embrace the first opportunity of sending them. I have sure information that the *Soldanella alpina* is a native of Wales: please let me know if it is generally known as such. I have put in the *Prímula scótica*, as it was I who named it, and, I believe, first detected it as a new British plant. John Dunlop, Esq., brother of the late General Dunlop of Dunlop House, brought it to me for the *Prímula farinosa*, as he supposed he had found a new habitation for it. I said, when I received it from him, I was truly obliged to him for it; for, if not a new species, it was a singular variety: this happened eighteen or nineteen years since. I am, Sir, &c.

Monkwood Grove, near Ayr, Aug. 30. 1827.

JAMES SMITH.

THIS communication has been delayed, partly owing to the extreme difficulty of deciphering the manuscript. That the very latest novelties procured by Mr. Smith might be included in it, we sent him a proof, which has been received, with his corrections, this 4th day of September, 1830. We recommend the first alphabet in this list to the three nurserymen who are forming arboretums, viz. Messrs. Donald, Young, and Buchanan. Mr. Smith mentions that he has upwards of 600 species and varieties of plants, and that he is yearly making considerable additions. His son-in-law, who has been all the season in Russia, is daily expected with an extensive collection. — *Cond.*

Hardy Trees and Shrubs.

- | | |
|--|--|
| <i>A'cer</i> <i>Pseùdo-Plátanus</i> <i>hýbrida</i> | <i>v. variegátum</i> <i>aúreum</i> |
| <i>v. argentíssima</i> <i>nòva</i> and <i>aúrea</i> | <i>A'l'nus</i> <i>glutinosa</i> <i>v. variegàta</i> |
| <i>nòva</i> | <i>v. laciniàta</i> <i>v. quercifòlia</i> |
| * <i>v. variegàta</i> | * <i>v. grossulariæfòlia</i> |
| * <i>v. præ'cox</i> | <i>Andrómeda</i> <i>polifòlia</i> <i>v. angustifòlia</i> |
| * <i>v. simena</i> [?] <i>coccínea</i> | <i>v. latifòlia</i> <i>v. subulàta</i> |
| <i>campéstre</i> <i>v. fòliis variegàtis</i> | <i>A'rbutus</i> <i>U'nedo</i> <i>v. rùbra</i> |
| <i>v. macrophýlla</i> | <i>v. fòliis variegàtis</i> |
| <i>Æ'sculus</i> <i>Hippocástanum</i> <i>v. præ'cox</i> | <i>v. flòre plèno</i> <i>v. longifòlia</i> |
| * <i>v. críspum</i> <i>v. élegans</i> <i>nòvum</i> | <i>U'va-úr'si</i> <i>v. or sp. angustifòlia</i> |
| <i>v. angustifòlium</i> <i>v. ròseum</i> | <i>Azàlea</i> <i>procúmbens</i> <i>v. prostràta</i> |
| * <i>v. hýbridum</i> <i>v. variegátum</i> <i>argénteum</i> | <i>Bérberis</i> <i>vulgàris</i> , being without seeds |
| | <i>v. frúctu álbo</i> |

Bétula álba córtice nìgro v. pèndula
v. fòliis variegàtis
nàna v. diffùsa

Búxus sempervirens v. arbòrea
v. arbòrea variegàta v. weeping
v. latifòlia
*v. arbòrea v. angustifòlia
v. crìspa and v. variegàta
v. nàna v. latifòlia
v. nàna nòva
v. myrsinifòlia

Cárpinus Bétula v. variegàta
v. quercifòlia v. asplenifòlia
*v. pèndula

Castànea vésca v. asplenifòlia
*v. fòliis maculàtis v. lævigàtis
v. fòliis argénteis v. variegàtis

Cistus Heliánthemum, in all 36 varieties
v. variegàtum nòvum
v. variegàtum v. plèno lùteo, with
eight or nine singular varieties
in their flowers

Cýtissus Labúrnium v. incìsum
v. fòliis variegàtis

Cratægus Oxyacantha v. plèna
v. fl. ròseo v. præcox
**v. grandiflòra v. frúctu aúreo
nòva
v. frúctu lùteo v. frúctu bicolori
**v. frúctu striàto v. apétala. Beautiful.

*v. caúle flexuòso. Thorns recurved, singular
v. fòliis variegàtis v. shoots and
leaves variegated
v. pùmila v. weeping
*v. spléndens

*v. frúctu subvìride nòva

Córnus sanguínea, variegated

Córylus Avellàna v. fòliis variegàtis
v. fòliis aúreis, with several rare
varieties in fruit

Cómarum palústre v. variegàtum
*v. or *sp.* minus

Dáphne Mezereum v. frúctu álbo
v. serótinum

Empetrum nigrum v. eréctum,
Scotch

Erica vulgàris v. plèna v. álba
v. flóribus argénteis.

*v. álba procumbens v. lanàta
*v. tomentòsa v. fl. rùbro
*v. fòliis variegàtis argénteis v.
aúreis
*v. dumòsa pùmila
cinèrea v. fl. álbo v. coccíneo
*v. prolífera v. lilac

v. bícolor v. purple-tipped

Tétralix v. álbo

v. màjor pàllido

vàgans v. álba v. rùbra v. càrnea

Euónymus europæa fòliis variegàtis
v. frúctu álbo v. pùmila

Euphórbia amygdalòides, variegated

Fàgus sylvática v. purpùrea
v. marginàta v. asplenifòlia

*v. pèndula v. undulàta

Fráxinus excélsior v. pèndula

v. córtice striàto v. córtice rugòso

v. córtice verrucòso v. crìspo

v. integrifòlia

v. fòliis digitàtis

*v. fòliis térnis oppòsitis

v. argénteà angustifòlia v. variegàta nòva

v. córtice et fòliis variegàtis

v. córtice aúreo v. fòliis aúreis

Hédera Hèlix v. variegàta v. élegans
variegàta

v. aúrea variegàta

v. fòliis digitàtis v. fòliis palmàtis

v. subcordàta

v. arbòrea v. màjor. The Irish
ivy

*v. arbòrea nòva. Elegant

*v. frúctu álbo

Flex, several varieties, but, I believe,
none that are rare

Juníperus communis, mas. and fem.
v. arbòrea. Upright Scotch

Ligústrum vulgàre v. blotched-leaved
v. stríctum angustifòlium v. frúctu
lùteo

Lonicèra Periclymenum v. variegated

v. Dutch variegated v. quercifòlium
variegated

v. grandiflòrum v. parviflòrum

v. flòre álbo v. ròseo

Menzièsia polifòlia v. coccínea

*v. nàna dumòsa

Myrica Gálè, mas. and fem.

Pinus sylvestris v. fòliis variegàtis

Abies variegàta

álba and pícea fòliis variegàtis

**Prùnus Pàdus* v. fòliis variegàtis
v. minor

doméstica plèna

**Pýrus Málus* v. fòliis variegàtis.
Elegant

v. córtice fungòso

v. variegàta apple communis
variegata

- communis flore pleno
 **Quercus Robur* v. variegatum novum. Elegant
 *v. variegatum v. asplenifolium novum
 *v. laevigatum majus dentatum novum
 v. laciniatum v. novum
Ribes nigrum v. foliis variegatis
 v. foliis laciniatis v. fructu viridibrum v. foliis variegatis
 v. fructu striato v. fructu pallido
 v. fructu albo. True Scotch variety
 v. foliis blotched
 *petraeum fructu albo
Rosa arvensis v. foliis variegatis
 v. fl. pleno
 canina v. fl. pleno
 acicularis v. fl. albo
 tomentosa v. fl. albo
 villosa v. plena v. parviflora
 spinosissima, ten single varieties
 v. foliis variegatis
 v. plena, above 100 sorts, most of them our own rearing, 35 of which are very fine
Rubus fruticosus v. plena
 v. fructu albo
 v. rubra v. rubra plena
 v. foliis argenteis variegatis
 v. foliis aureis variegatis
 v. hispidissima
 *v. caule laevo glaucis foliis
 *v. c. l. g. f. prickles ascending, singular
 suberecta v. plena
 v. almost thornless
 v. spinosissima
 corylifolia sub-plena, large
 *grandifolia, dwarfish, singular
Salix caprea, variegated
 cinerea, variegated
 v. cortice fungoso
Forbyana, variegated
 alba, fem. catkin crowned with leaves
Sambucus nigra, variegated, v. fructu viridi
 v. foliis laciniatis v. rotundifolia
 *v. caule monstruoso v. parviflora
 *v. foliis argenteis v. aurea nova
Solanum Dulcamara, variegated
 v. fl. et fructu albo
 **Sorbus aucuparia* v. foliis variegatis
 v. caule monstruoso
 hybrida v. pendula, with 18 or 20 more seedling varieties
Spartium junceum fl. sub-pleno
 v. fl. albo v. foliis variegatis
Spiraea salicifolia foliis variegatis
 *v. corymbosa v. longifolia undulata
Taxus baccata v. stricta. Irish
 *v. nova stricta. Scotch. v. latifolia
 v. foliis variegatis
 **Tilia europaea* v. asplenifolia
 v. pendula
 v. cortice aureo
 **Vaccinium Vitis-Idaea*, variegated
 v. major. Scotch and Irish
 Myrtillus major
Vinca minor, gold and silver variegated
 v. media blotched v. minor purpureo pleno
Viburnum Lantana latifolia
 v. foliis variegatis
Opulus foliis variegatis and rosea
 **Ulex europaea* stricta. Scotch
 v. fl. pleno
 v. foliis variegatis
 v. stricta. Irish
 **Ulmus campestris* pendula nova
 and *v. prostrata nova
 *v. adpressa v. cucullata nova
 v. foliis variegatis
 *v. nana nova
 v. humilis foliis attenuatis et acuminatis
 *v. weeping common
 v. asplenifolia variegated
 major variegated
 suberosa foliis pulverulentis

Hardy Herbaceous Perennials.

- Achillea Ptarmica* v. pleno
 v. corolla quilled or fistulous
Millefolium rubro v. fol. var.
Ajuga reptans v. albo v. rubro v. pleno v. foliis variegatis
Alchemilla vulgaris, variegated and pubescent
 alpina v. major
Anchusa angustifolia albo
Anemone nemorosa pleno
 v. rosea v. caerulea v. grandiflora
Pulsatilla caerulea or atropurpurea
Anthemis nobilis pleno

- tinctoria, variegated
Anthyllis Vulneraria v. rubro v. albo
 v. pallido
Apargia autumnalis fl. albo
Armeria vulgaris v. coccineo v. albo
 v. pumila v. alpina
Artemisia vulgaris, variegated
Arum maculatum v. viride
Asperula odorata v. latifolia v. angustifolia
Aster Tripodium v. latifolium
Astragalus hypoglottis v. albo
Ægopodium Podagraria, variegated
Bellis perennis, above 60 varieties,
 single, double, and profliferous,
 many of them very fine
Betonica officinalis albo
Borago officinalis albo
Caltha palustris pleno v. radicans v.
 pallida
Campánula glomerata albo v. major
 latifolia v. albo v. cæruleo
 patula v. albo
 persicifolia cærulea nova pleno,
 &c. v. nova
 v. alba pumila pleno v. albo
 single nova
 rotundifolia v. albo v. pallida
 v. longifolia v. longiflora
 **Trachelium cæruleum* plenum
 and v. plenissima
 v. album majus plenum
 v. cæruleum majus plenum
 *v. bicolor plenum
Cardamine pratensis pleno v. prolifera
 *v. albo v. albo pleno or rocket
 do.
 * singularly beautiful
Carduus Marianus v. non-maculata
Centaurea nigra alba v. carnea
 v. grandiflora pleno
 v. grandiflora v. laciniata
 v. foliis cucullatis v. foliis variegatis
Scabiosa v. albo
Cheiranthus Cheiri pleno. True
Chelidonium majus plenum
 v. or sp. laciniatum
 **Chrysanthemum leucanthemum*,
 quilled
 v. foliis variegatis
Cnicus arvensis alba v. fl. viridi
 v. pallida v. leaves nearly entire
 lanceolata albo and carneo
 palustris alba
Cólchicum autumnalis v. pleno
 v. cærulea v. versicolor nana
 v. foliis variegatis
Convallaria majalis plena variegata
 v. fl. rubro
Polygonatum v. fl. pleno
Convólulus arvensis v. albo
 sepium v. rubro
Cýclamen europæum album v. angustifolium
 **Cynosurus cristatus* viviparus.
 Beautiful
Digitalis purpurea v. albo v. carneo
 **Doronicum Pardalianches*, variegated
Epilobium hirsutum, variegated
 tetragonum v. variegated v. nanum
 montanum v. foliosum v. albidum
 palustre fl. pallido
 angustifolium album
 v. dumosum and spicatum new
 sp. English
Eryngium maritimum foliis variegatis
Eupatorium cannabinum fl. albo
Erodium cicutarium album
Euphrasia Odontites albo
 officinalis fl. cæruleo
Festuca ovina, viviparous
Fritillaria melægris alba v. pleno
Galanthus nivalis pleno
Galeobdolon luteum foliis variegatis
 v. maculatis
Gentiana campestris pleno
Pneumonanthe v. albo
Geranium pratense album v. albo
 pleno
 v. album versicolor v. cæruleo
 pleno
 sylvaticum v. albo
Robertianum v. albo
 molle v. albo
 **dissectum* v. albo
Gèum rivale, variegated
 urbanum, variegated
 semperflorens new sp. British
Glechoma hederacea, variegated
 v. foliis cristatis
Glaux maritima alba
Gnaphalium dioicum, mas. and fem.
 v. dioicum rubrum v. major or sp.
Hesperis matronalis albo pleno and
 cæruleo pleno
 v. flore maculato
 **Hypêricum pulchrum* pallidum
Hypochæris radicata fl. albo
Iris Pseud-Acorus foliis variegatis
 a variety, or rather a species.
 Beautiful, straw-coloured, and

grows much taller in the flower-
stem than the *Pseud-Acorus* :
it has a pleasant smell
foetidissima fòliis variegàtis
Juncus squarròsus fl. pleno
Láthyrus praténsis v. latifòlia, pubes-
cent
Lòlium perénne fl. pleno
Lòtus corniculàtus, variegated
v. angustifòlius or *sp.*
màjor tomentòsus
Linària vulgàris v. álbo v. orange
v. *Pelòria*
Cymbalària fòliis variegàtis
v. fl. álbo
v. rèpens cærùlea or *sp.*
Linum usitatíssimum fl. álbo
Lùzula sylvática, variegated
Lýchnis Flos-cùculi v. fl. álbo
v. fl. cárneo v. fl. pleno
Viscària v. álbo v. cárneo
v. fl. pleno
dioíca v. fl. álbo v. pleno, red-
flowered
*v. or *sp.* of do. fl. pleno. Elegant
v. of do. fl. álbo, and of both red,
white, and great-flowered are
mas. and fem. v. álbo pleno
**Lysimàchia némorum*, variegated
Matricària Chamomílla fl. pleno
v. fl. quilled, *v. quilled pleno
v. fòliis variegàtis
v. plumòsa or *sp.* v. plumòsa
pleno v. quilled pleno
marítima v. variegated v. nàna
Málva moschàta álbo
Méntha sylvéstris, variegated
**Myosòtis* v. or *sp.* fl. álbo
Mercurialis perénnis, mas. and fem.
Narcíssus minor v. plenus nòvus
*galanthifòlius, and 27 other
varieties from seeds, which
form a beautiful collection
poéticus v. plenus
Ænanthèra biénnis pállida
Onònis spinòsa fl. álbo
*spinòsissima nòva *sp.* Scotch
arvénsis v. fl. álbo v. rùbro
v. spinòsa v. spinòsa álba
v. pállida v. fòliis variegàtis
Órchis latifòlia álba
maculàta álba
Órobus sylváticus v. rùber
Óxalis Acetosélla cærùlea
**Pæònia officinàlis* v. fl. versícolor
nòva. Singular
*v. plena nòva
Plantàgo latifòlia ramòsa foliòsa

v. ròsea v. fòliis variegàtis
lanceolàta v. fòliis variegàtis
v. màjor, hoary-headed
*v. glomeràta nìgra v. álbo
v. foliòsa ramòsa v. ròsea
v. lùrida màjor
marítima v. ròsea
v. fòliis variegàtis
v. màjor.
Prímula scótica
farinòsa álba
*vèris, 20 varieties, singular and
beautiful
vulgàris
*v. calycina v. calycina álba
v. álba elàtior v. álbo
v. elàtior cærùlea
Prunélla vulgàris v. álbo v. rùbro
v. punctàta v. pállida v. pleno
v. fl. variegato v. pùmila or *sp.*
Pulmonària officinàlis cándida
v. fòliis candidíssimis v. fl. àtro
cærùleo
v. fl. álbo
Pyrèthrum Parthènum plenum
**Pòa triviàlis*, variegated
alpina v. variegated v. vivípara
Polemònium cærùleum fòliis varie-
gàtis v. álbo
Polypòdium vulgàre latifòlium
v. monstròsum nòvum
Dáctylis glomeràta, variegated
Festúca argénteà variegata
*v. aúrea variegata
Ranúnculus bulbòsus pleno
àcris pleno, v. straw-coloured
v. màjor pleno
Ficària v. pleno v. màjor
**v. màjor pleno v. álbo
**v. fl. pállido v. ramòsus bulbí-
ferus
*v. or *sp.* calthæfòlius
rèpens fl. pleno v. angustipétalus
*aurícomus v. màjor
Rhodìola ròsea, mas. and fem.
*v. altíssima angustifòlia
Saponària officinàlis v. pleno
v. hýbrida
Saxífraga umbròsa, variegated
granulàta plena
Scabiòsa succisa v. álbo v. rùbro
v. pállida v. máxima v. minòr
v. tubiflòra
arvénsis v. álbo
Scrophulària aquática, variegated
v. nodòsa fl. álbo v. fòliis varie-
gàtis
Scílla vèrna álba v. rùbro

- v. pallida nutans alba v. rubro*
v. bicolor v. bracteolata
v. pallida
Scolopendrium fol. ramosis multifidis
v. undulatum apice multifido
v. latifolium multifidum
**v. laciniatum v. crispum*
**v. undulatum * v.*
v. angustifolium v. latifolium and
other varieties
Sedum Telephium v. majus latifolium
v. fl. albo v. verticillatum
**v. foliis viridis v. fl. coccineo*
v. latifolium undulatum
Serratula tinctoria alba
Silene maritima fl. pleno
v. angustifolia acaulis v. albo
Scutellaria galericulata fol. pubesc.
Sedum acre apice aureo
reflexum monstrum majus
v. montanum
viride monstrum
Soldanella alpina. A native of
Wales
Sonchus maritimus
**v. fl. albo*
montanus sp. or v. ?
v. lacerus minor. Singular
**Statice reticulata v. or sp. ?*
Symphytum officinale v. album
atropurpureum v. coccineum
v. rubrum v. foliis variegatis
Spiræa Ulmaria v. variegata
**v. variegata elegans v. pleno*
Filipendula fl. pleno
Stachys palustris fl. albo
**foliis variegatis*
palustris major
**Spargula saginoides pleno*
Thymus Serpyllum v. fl. albo
**v. fl. coccineo v. fl. pallido*
- v. foliis variegatis argenteis v.*
fol. aureis
v. foliis hirsutis
v. angustifolium
v. latifolium
**Tormentilla media and recta var.*
Trifolium repens v. foliis luridis
v. quercifolium luridum
hybrid and medium album
v. luridum
**Trollius europæus albus*
Tussilago Farfara, variegated
Verbascum nigrum albo
Blattaria v. albo
Valeriana dioica, mas. and fem.
rubra v. coccineo v. albo
Veronica officinalis v. albo
**v. rubra v. pallida*
Beccabunga v. albo and v. minor
scutellata v. albo v. rubro
Chamædrys v. major
**v. minor stricta*
**v. foliis variegatis*
serpyllifolia alba
montana foliis variegatis v. albo
spicata v. elegans v. latifolia
v. alba v. speciosa v. major
v. humifusa v. albo
**præcox*
**Vicia Cracca alba v. rubro*
v. major
**sèpium fl. albo*
Viola odorata pleno
v. alba v. alba pleno
v. rubra v. rubra pleno
**canina v. rubra v. foliis varie-*
gatis
v. fl. albo, called lactea
Urtica dioica, mas. and fem.
**v. hermaphrodita*
v. foliis longis grandidentatis

ART. II. *Arborètum Britànnicum.*

We have already announced this work (p. 582.), and in our advertising sheet some other particulars respecting it will be found, in connection with our announcement of *Illustrations of Landscape-Gardening*, an *Encyclopædia of Cottage Architecture*, an *Encyclopædia of Cottage Husbandry*, *Korân Minor*, *Agricola Minor*, and an *Encyclopædia of Landscape-Gardening*. We invite particular attention to our notices respecting these works, chiefly with the view of procuring all the assistance we possibly can from our readers and correspondents. We consider that the *Arborètum Britànnicum*, if executed in the manner in which we expect to accomplish it, will be of

very great use to gardeners and to their employers; and will contribute more than any work that could be published towards the introduction into our plantations and pleasure-grounds of new, valuable, and ornamental species and varieties of timber and ornamental trees and shrubs. Before trees can be introduced, it is necessary that they should be known, their uses, appearance, culture, propagation, &c.; and this it is the object of the *Arboretum Británnicum* to effect. When once known, they will be in demand by planters; and this demand will create the requisite supply by nurserymen. This supply, to a certain extent, exists; but, for want of an adequate demand, the price of the trees is much greater than it otherwise would be, and the demand of course comparatively limited.

The arrangement of the work will be according to the natural system, and, as stated in the notice referred to, not only botanical figures of every species will be given, but figures of the entire tree or shrub; all those in the volume, of the same age, being figured to the same scale, in a certain stage of their growth. The drawings for these figures have been making for some time past in the arboretum of Messrs. Loddiges. Drawings of full-grown specimens are also in preparation from specimens at different places within twenty miles of London, and all of these will be engraved to the same scale. No drawings of trees remarkable for their age or peculiarity of growth will be given, as this would introduce ornament as a leading feature in the work, and thus render it too dear for effecting the end in view. Besides, it would interfere with Mr. Strutt's *Sylva Británnica*; or Portraits of Forest Trees distinguished for their Antiquity, Magnitude, or Beauty; an admirable work, and one that we should feel it dishonourable to interfere with in the slightest degree. (See *Mag. Nat. Hist.* vol. iii. p. 546.)

In describing each species and variety, —

1st. The *specific character* will be given from Decandolle, Lindley, Don, or other authors, and a figure by Sowerby; all those species and varieties belonging to the same genus being drawn to one and the same scale.

2d. The *general character and description*; including form and height in youth, say at the age of ten years from the nursery (about the average of the trees in Loddiges' arboretum), and at maturity, or say at the age of 30 years or upwards to 50 years, as far as can be obtained by our own draughtsmen within 20 miles of London, or from the exertions of correspondents in every part of Britain and Ireland. The periods of foliation, and the colour of the buds and opening leaves in spring, that is, the dates, from January to June; the shades of green during summer, that is, from June to August; and the periods of defoliation, and the autumnal hues of the foliage, that is, the dates of the change, from Sept. to Jan.; with the character of the ramifications and spray in winter, will be included under this head. The information on these points has been, and is now, collecting for by us proper persons in Messrs. Loddiges' arboretum, in the arboretum of the Horticultural Society, and in the arboretum at Kew. The time of flowering, colour and duration of the flower, its general or popular character, and the size, colour, time of ripening, and duration of the fruit or seeds, will also be given under the same head.

3d. The *geographical, physical, and animal relations* of each species; including distribution in different countries; native habitation as to soil, subsoil, and rocks; elevation, sea, air, water, shade, &c.; and birds, insects, or other animals to which it gives support, or by which it is injured, &c., will be given from the original Floras of the different countries of which the trees and shrubs are natives, and from the writings of botanical travellers and topographers. Excellent resources for such writings are, the library of the Linnean Society; that of the Horticultural Society; the Banksian Library, now in the British Museum; and the library of W. Forsyth, Esq.; to all of which we have access, and can procure it for our coadjutors.

4th. *Economical relations* ; including the application of the timber or other parts of the tree in the arts, useful or ornamental ; in medicine, and in domestic economy ; territorial improvements in profitable planting, and in landscape-gardening, &c.

5th. *Propagation and culture* ; the latter from infancy to maturity.

For all the information that can be procured within twenty miles of London we have provided ourselves ; and therefore what we particularly wish from our correspondents, is chiefly as follows : —

1. The names, accompanied by dried specimens, no matter if the flower is wanting, of such trees and shrubs as are in the country, though not included in our *Hortus Britannicus*. There may be a few of these in the hands of country nurserymen and amateurs ; and if such will not take the trouble to send us specimens, we request them to send us plants, which we shall hand over to Messrs. Loddiges, on condition of getting a specimen for the use of Mr. Sowerby next summer.

2. We should be glad to receive portraits of all trees whatever, not natives of Britain, but above thirty and under fifty years of age ; also of all trees and shrubs, not natives of Britain, from ten to fifteen years of age, in their winter state and in their summer state. Even if we receive a dozen portraits of one species, the circumstance will only enable us, by comparison, to determine more accurately the true character of the tree. With every drawing, the name, age, soil, subsoil, situation, whether open or surrounded by other trees, length of young shoot made in a season, elevation, and other relative circumstances, must be given.

3. We shall be glad of miscellaneous hints of any description.

4. Communications that shall have been made use of, either in part or wholly, will be acknowledged in the preface, and by a copy of the work from 30 to 40 per cent under the selling price ; or where much information is given and made use of, a copy of the work at half price, a fourth of the price, or *gratis*. All suggestions for the improvement of the plan, as above developed, will be particularly acceptable, and ought to be sent immediately ; all other information will be in time if received by midsummer-day next, as the work will to a certainty be put to press in August 1831. In the mean time, the botanical drawings are in preparation by Mr. Sowerby, and the engravings by Messrs. Branston. — *J. C. L. Nov. 4.*

ART. III. *Retrospective Criticism.*

PRINCIPLES and Conduct of the Conductor.—When first you commenced your publication, a few gentlemen in this district agreed to promote it for the use of their gardeners ; and although they perceived the political bias it was to have from the letters of (*nominal* [real]) discontented gardeners, yet they sought to rebut their tendency through the old axiom, “ *Necessitati, qui se accommodat sapit ** ;” for every man knows that labour is a marketable commodity, just worth, as Butler writes, what it will bring. Since then we have had constant tirades against gentlemen for not yielding more and better accommodation to their gardeners ; but, as not one in a hundred ever reaches the situation of overseer, the very men themselves see the childishness of the complaint. Care and assiduity scarcely secure permanent situations : where a vacancy occurs, the numerous applications permit the master to pick and choose at his own price. Is this the employer’s fault, or is the craft of horticulture, like other produce, subject to the customary depression of an overstocked market ? In some late numbers, *mas-*

*. “ A wise man accommodates himself to necessity.”

ters, not gardens, are reviewed: but our business is with horticulture; with the gardens of White Knights, not with the owner; with the employed, not with the employer. What have we to do with terro-metallic teeth, with ovens, or with ladies' earrings, unless fabricated from the Cannácorus, &c.? No doubt these subjects are good political pegs to hang a hat upon, or to form squibs against the pauper aristocracy; but in no way will they add subscribers to your Magazine, or employment to gardeners. Rather the reverse. If you make my servant a politician, you render him restless and discontented; he communicates the infection and is uneasy. If contented, I have my comfort, and he exchanges his labour for money and for money's worth. If otherwise, I can buy my luxuries cheaper by 50 per cent than I can grow them; nor would my servant, an excellent fellow, and industrious, take any large garden *this year* rent free. We own ourselves sorry to see a publication which might have been made highly useful, and have materially conduced to the good understanding between master and man, turned (in our estimation) into a political engine for disuniting them; a manual, to instruct young gardeners that they do not reap emolument according to their deserts: when, in point of fact, right or wrong, the payer constitutes himself sole judge. Nor can he or you alter the tribunal.

We are, perhaps, as little inclined to wear a modern Wig, or to support a Tory, as the Editor of the Gardener's Magazine; but we think that in taking hints from the Continent, in more matters than "abattoirs," sound judgment and discretion are required. Abuses must be worked off, not in anarchy and confusion, but by sound reasoning upon virtuous principles. We therefore decline receiving into our houses your Magazine until the *modus in rebus* [middle course] is better digested than at present; for we have not forgotten the adage, "Summum jus summa injuria." * We, however, shall watch the politics of the publication, and add our mite, if some sanative drug has its due effect. "Omnes errorem bibunt †:" we *all* have need of physic. — *Your Friend and a Well-wisher to Horticulture.*

This excellent friend, and much esteemed contributor, for whose early communications we have not forgotten our obligation, will find that we are always happy to hear honest opinions, to receive good advice, and not too old to learn. — *Cond.*

The Botanical Register and the Botanical Magazine. — Sir, I observe with pleasure in your last Number (p. 449.), a letter signed K. in which the writer speaks of the comparative merits of the *Botanical Register* and *Botanical Magazine*, and suggests certain alterations necessary to be made in the *former* of the two works "before it will obtain the unqualified approbation of its subscribers." Your correspondent complains particularly of "the frequency of publishing the same plants which have before appeared in other works," and, which is the most serious charge against the *Register*, "the imposition of an additional shilling, for a single leaf of index, at the end of every twelve numbers." He might have added, too, that this extra-shilling is extorted from the pockets of the purchasers, under the false pretence of furnishing them with an appendix. Being, like your correspondent, a constant subscriber to the *Register*, and possessing a complete copy of the work from the commencement, I feel that I have an equal right with him to enter my protest against so shameful a practice, and I beg to thank him for his letter, and most cordially to join in every sentiment it contains. I rejoice to see the subject taken up in the Gardener's Magazine; as it has been also, unless I greatly mistake, in the *Magazine of Natural History*, by another writer, who signs himself "A Purchaser of Periodicals." I allude to what is said (Vol. III. p. 305.) of the latter work, where the *Botanical Register* plainly appears to be referred to. Who the proprietor of the

* "Extreme right is extreme wrong."

† "All drink error."

Register may be, — that is, who pockets the profits arising from this precious morsel, this twelpenny worth of index, miscalled appendix, — I do not know. The only name (besides that of the bookseller) which appears on the titlepage of the *Register* is that of Mr. Sydenham Edwards. To most of the descriptive portions of the work, in the latter volumes at least, the initials J. L. are affixed, which are, I believe, universally understood to signify that eminent botanist Mr. Lindley. I am far from meaning to charge either of these gentlemen with being guilty of so mean a transaction as the one in question; but, as their names appear in connection with the work, I think they owe it to their own characters to use their influence in the proper quarter towards the discontinuance of the practice, or publicly to avow, through the medium of your pages, that they have no participation in the fraud. Yours, &c. — *A Subscriber to the Botanical Register.* Aug. 6. 1830.

Doctor Hooker's British Flora. — When I procured the *British Flora* by Dr. Hooker, I expected that I should find in it such information as is essential to be known in order to ascertain the species of plants, disencumbered in a great measure of all unnecessary remarks. One of the first plants that I picked up, after having had this work, was *Gentiana campéstris*, which I did not know at that time. When I found that my plant had four stamens and one pistil (the stigmas being united), I sought for a description of it in *Tetrándria Monogýnia*; but in vain. I then showed it to a competent botanist, who told me that it was a *Gentiana*. I turned over all the *Gentianæ* in the *British Flora*, and could not find that my plant agreed with any of them, because it had only four stamens. However, after long puzzling, I at last found, from its general character, that it was *Gentiana campéstris*; but, at the same time, I felt assured that it must be a strange variety, as the *British Flora* does not say a word about any of the *Gentianæ* having only four stamens; while, of course, from the situation in which I found that genus, I thought that all its species ought to have five stamens. I happened afterwards to meet with Sir J. E. Smith's *English Flora*, in which I found it remarked of the genus *Gentiana*, "*filaments as many as the segments*," and of *G. campéstris*, "*corolla four-cleft*." How soon did these few words awake me out of the fond dream of having discovered a strange variety of *G. campéstris*, into which I had been thrown by the hasty Scotchman! [Dr. Hooker is an Englishman.] This is but a specimen of the many blunders in the *British Flora* calculated to puzzle students. — *J. Jones. Llanfair, Montgomeryshire, September, 1830.*

The Florist's Guide. — Sir, Having been much pleased with the improvement of some of the last Numbers of the *Florist's Guide*, I was greatly disappointed to see that it will shortly be discontinued. It certainly cannot be treating Mr. Sweet well, that, after the pains he has taken to make himself acquainted with florist's flowers, and just when he began to edit the work well, for want of sufficient support he is obliged to drop it. It may be a question whether it is not owing to the trickery of florists; for figuring the flowers certainly tends to establish their names, and prevent the same flower being sold under three or four different names, as is too often the case. We hear of florists' societies in almost all parts of the kingdom, and it is a disgrace to them to let the work fall to the ground; for why should not floriculture have a periodical work, as well as any other department of gardening? I still hope that florists will more generally come forward, and induce Mr. Sweet to continue his work, by rendering him that support which will enable him so to do. I am, Sir, yours, &c. — *An Amateur.*

Mr. Main's Villa and Cottage Florist's Directory. — Sir, In two instances, I think, you have been good enough to allow authors to make replies to their reviewers in your Magazine: I have to beg the same privilege in a few lines. Tingling (not smarting, I assure you) under the "castigation" of your reviewer of my little book on Floriculture, I feel, notwithstanding, quite disposed to return my best thanks for the very civil terms in which

you have both been pleased to speak of me personally. This I do in perfect good humour; because you know well that I long ago predicted, and consequently expected, this chastisement. I am only assailed on what, I am very sensible, is my weak side, namely, my inadequate powers of language. Still there is something cheering; not a word is said against what may be called my peculiar opinions on the subject, which my reviewer regrets so much I should have meddled with. These opinions, such as they are, I suspect, constitute "the head and front of my offending." They, though in truth too briefly asserted, are plain enough to practical men; and why should they be so mysterious to a man of science? The reason is obvious, though it is not for me to explain. Had these opinions been refuted, both my readers and myself would have been instructed. Refutation, it seems, would have been an easy affair; and it would have been far more graceful and consistent with the character of a superior, to have ingenuously exposed my mistakes, than to have thrown over the whole such a guise of ridicule. This omission I shall therefore accept as an indirect compliment; and I also flatter myself that, had my book received even a very slight perusal, my reviewer could not have charged me with such ignorance of vegetable structure, as to be unable to distinguish a root from any other member of a plant.

Having passed this *cold water* ordeal, I shall not, however, quail under it, as it is more than probable I may again take up the subject of vegetable physiology in another shape; in doing which I shall certainly avail myself of my reviewer's grammatical corrections, which I have no doubt are just, though I am not accountable for the misuse of all the terms. It will then be seen whether the same ideas, conveyed in other words, will be more palatable; though this I hardly expect. Still, if I can but gain, as I have already done, the approval of practical pens, I shall not dread the erasures recommended by your friend my reviewer. Believe me to remain, Sir, yours, &c. — *J. Main. Chelsea, October 4. 1830.*

Destroying Earwigs by Tin Pipes. — A correspondent (J. M., p. 491.) recommends the adoption of small tin tubes for the purpose of catching earwigs which annoy fruit on wall trees. Instead of going to the tin-man for the said tubes, let us apply to our own garden; to the English bamboo, which every one that has a plot of ground may grow, the *Arundo Donax*. With this, not only may the liquorish-mouthed earwig meet a dire fate, but the head of ingenuity sacrifice to the god Pan in concord of sweet sounds. — *W. Mason, jun. Necton Hall, Norfolk, August, 1830.*

Bishop's Dwarf and Early Frame Peas. — In the observations following the list of prices of fruits, vegetables, &c., of Covent Garden Market (p. 372.), it is stated that Bishop's peas dropped their blossoms eight days sooner than the early frame. I did not notice the dropping of the blossom. Bishop's dwarf pea being a favourite with me, I resolved to give it a fair comparative trial with the frame. On the 15th of February, 1830, I had a favourable border trenched over, and sown the first afternoon; first, two rows 2 ft. apart of the Bishop's, and then five rows of the early frame 3 ft. apart. The first dish I could gather from the early frame was on the 15th of June; the first dish I gathered from Bishop's was on the 1st of July. — *W. P. Vaughan. Brecon, July 20. 1830.*

Quercus Robur and sessiliflora. — Sir, As I know you do not mind being found fault with, I take the liberty of questioning your accuracy (in a friendly manner, and merely in the way of private correction) on one or two points in your Number for August. First, then, at p. 458., you seem disposed to consider *Quercus Robur* and *sessiliflora* as mere varieties: this may be matter of opinion, though, for myself, I am inclined to think them distinct species. But be this as it may, you certainly are not correct in stating that "the latter name (*sessiliflora*) is merely a synonyme of Sir J. Smith's, in his *English Botany*, to distinguish it from *Q. pedunculata*." Both

kinds are figured and described in *English Botany* as distinct species, under the names of *Ròbur* and *sessiliflòra*, without any intimation of their being only varieties. The timber of *Q. sessiliflòra* is considered to be inferior to that of *Q. Ròbur*: I agree with you that it perhaps has not "been clearly proved that the timber of the one is naturally, and without reference to soil and situation, better than the other;" but I think it probable that the timber of *Q. sessiliflòra* is inferior, merely because the tree is of quicker growth. Yours, &c. — *W. T. Bree. Sept., 1830.*

On turning to Smith's *English Flora* (vol. iv. p. 148.) we find *Q. Ròbur* and *sessiliflòra* are made species, and that *pedunculàta* is considered as a synonyme of *Q. Ròbur*, and not *sessiliflòra* as we have erroneously asserted. — *Cond.*

The Functions of Leaves. — Sir, Your correspondent N. H. (p. 414.), in his remarks on Stewart's *Planier's Guide*, says, "Should it be required to take any off the branches, I always defer it till the following season: I have a great respect for Mr. Gorrie, but I cannot agree with him in cutting any branches off fresh planted trees. I have found cuttings without a leaf removed strike much better than those which were stripped. The last three years I have particularly remarked this in striking *Eccremocàrpus scàber*: those cuttings struck best that had a leaf or a pair remaining at the very joint at which they were cut off, and, in fact, formed plants in nearly half the time that those did which had them removed." And in a marginal note he adds: — "This is proved by every-day experience: every man must be aware that roots make branches, and branches make roots; else how could a cutting strike root, or part of a root form a plant?" Now, had Mr. N. H. been pleased to favour us with his full name, it is likely our respect would have been mutual: but as I can give no particular preference to the N and the H over any other letters in the alphabet, my respect for the anonymous writer must be formed entirely by the opinion I entertain of the paper under consideration; which, bating a few puerilities, or, perhaps, agronomisms, is such as would do no discredit to his name, be that what it may. I can only agree with N. H., about deferring cutting off branches till the "following season," on the principle of "better late thrive than never do well." If it "be required to take any off," I should humbly suppose, the sooner that is done the better. Leaves and roots may, without any impropriety, be called conservative organs; but their functions are widely different, and mutually dependent on the operations of each other. If the roots, by fracture or lack of moisture, cease to perform their office, the leaves, in place of producing (or, as our author would have it, "of the branches making") roots, soon flag, and ultimately wither and fall off; and hasten, at the same time, the shrivelling of that bark and twig, which, had the root performed its office, they would have contributed to clothe with a fresh layer of living wood. It will be readily allowed that roots imbibe moisture from the soil, and that leaves attract and elaborate the sap thus supplied: if this be conceded, it will follow that a proper or natural balance between root and branch is most conducive to the health of the tree or plant. In the act of transplanting some roots will necessarily suffer, and in proportion, I contend, branches should be removed *instantly*. That proportion will be exceedingly small where the operation of transplanting is performed with due care, and amputations producing large wounds, difficult to heal while the tree is suffering from the removal, will be avoided: but, supposing that the transplanted tree has more foliage than root feeders, will not those supernumerary leaves in discharging their natural functions draw too liberally on the sap of the tree, and a small yellow leaf, which soon ceases to attract or elaborate sap, with a constriction of bark, be the consequence? Whereas, if root and branch are fairly proportioned by art or otherwise, a greater individual and general breadth of healthy foliage is preserved, and the operation of transplanting

is attended with less perceptible lassitude in the plant. It was to illustrate this position that, in my short letter on Sir Henry's book, I mentioned that, "when plants are struck by cuttings, every gardener knows that an excess of foliage has a tendency to exhaust the natural sap in the shoot;" and I say so still: and Mr., or Miss, or Mrs. N. H. will agree that an *excess* of foliage will have that tendency; otherwise, why proportion the length of the cutting above to that below the ground? If "leaves make roots" without this tendency, then why not plant a cutting a yard or a yard and a half long, with numerous leaves and branches? On this principle the roots will be the sooner formed. Be it observed, I was not then writing an essay on cuttings: I only alluded to a well known fact connected with that operation. I never either practised or spoke of stripping cuttings of their leaves; but, if they are left *in excess*, the redundant part will either decay, or the whole cutting will languish and die. It is not strictly logical to say, that "roots make branches, and branches make roots." They have intermediate functions to perform. I grant, nay, I contend, that the one cannot exist long in a healthy state without the other being in fair proportion; but certainly N. H. has seen foliage produced without their producing roots. Has he never seen a willow or poplar tree cut in winter produce foliage in summer without roots? Has he not seen the roots of deciduous trees increase in spring, when the leaves were enveloped in their winter garb? and has he never seen the willow or *Solanum Dulcamara* produce roots before the buds had opened? I hope N. H. will not take these remarks amiss, which he has called forth. Had he given his real name in place of a fictitious signature, I might perhaps have treated him a little more courteously. Whenever he chooses to appear *in propria persona*, he shall be treated on my part with that respect to which, I have not the slightest doubt, his merits and urbanity entitle him. In the twenty-sixth Number (I think it is) a Mr. Newington has given a Mr. Houseman a severe and ungardener-like drubbing. Such a scurrilous letter must recoil upon its author. Although we may happen to differ in opinion on several points, it does not follow that all who may venture to express an opposite opinion are deficient in practical skill. Newington has lost his temper, which some would construe into a tacit acknowledgment that he had the worst of the argument. I am, Sir, &c. — Archibald Gorrie. *Annat Gardens, September 3, 1830.*

Pruning Timber Trees. — According to the wishes of Agronome (as one of your readers) I have applied myself to *candle-making*, and beg to assure his superior judgment, that, as far as an experience of fifteen years goes, the *foreshortening* system of pruning forest trees answers most completely: first, in giving a lead to the main stem; and, secondly, in assisting trees to tower perpendicularly, where they grow in exposed situations. Some Chichester elms, 7 ft. high, and the size of an old gentleman's walking-stick, were planted by me in 1814. The situation being favourable, the plants soon threw up such vigorous shoots that, if left to themselves, they would have found tops like the many-headed hydra. I commenced the work of foreshortening *instantly*, and have continued it every year since. The trees, on an average, now rise a height of 50 ft., and are conically shaped. I have served oaks, ashes, and other elms, in like manner; but their height, from difference of growth, does not in any case exceed 30 ft. To ascertain the *timber* quality of this rapid-growing elm, I last year stubbed one up, put it on the sawpits, and had it cut into gate stuff, when the scantlings became dry. The carpenters said they could discern no difference between it and the wych elm of the country. As to beauty, the aspiring tree forms a contrast to the umbrageous one, the pyramidal to the round one; and our woods and parks become equally the objects of admiration and of utility, by at one time leaving nature to her own freaks, and at another putting her into a state of pupillage. In my humble opinion such system

belongs to no *man* or *writer* in particular, but to the *plain common sense* of the thing. One word more, and I have done. I believe it to be a great error not to prune the *Scotch fir*, by taking off a tier or two of boughs every two or three years. As for experience, I beg to say that, though the *spruce fir*, when it comes to the sawpit, will show no *knots* in the plank, however large its lateral boughs may have been, the *Scotch fir* uniformly *does*; and so much so as oftentimes to render it wholly unsightly, as well as unfit for flooring and other purposes. If *forest deal timber* is cleaned, because competition in growth destroys its lateral boughs, why not effectually imitate nature, by *gradually* reducing the stem to the same state? We have had spruce and Scotch fir of great magnitude in our sawpit not long since, the former planted by my grandfather, and the latter by my great-grandfather: the spruce, however covered with boughs, makes clean planks; the Scotch, clean planks only so far as the boughs had formerly been periodically removed. May not Q. E. D. be put after this, as a solution of the fir-pruning problem? Thus much, therefore, for the present, of *candle-making*, as Agronome says; in which, if I have any way succeeded to his wish, I shall be truly gratified; and beg leave to subscribe myself your obedient humble servant. — *William Mason, junior. Necton Hall, Norfolk, August, 1800.*

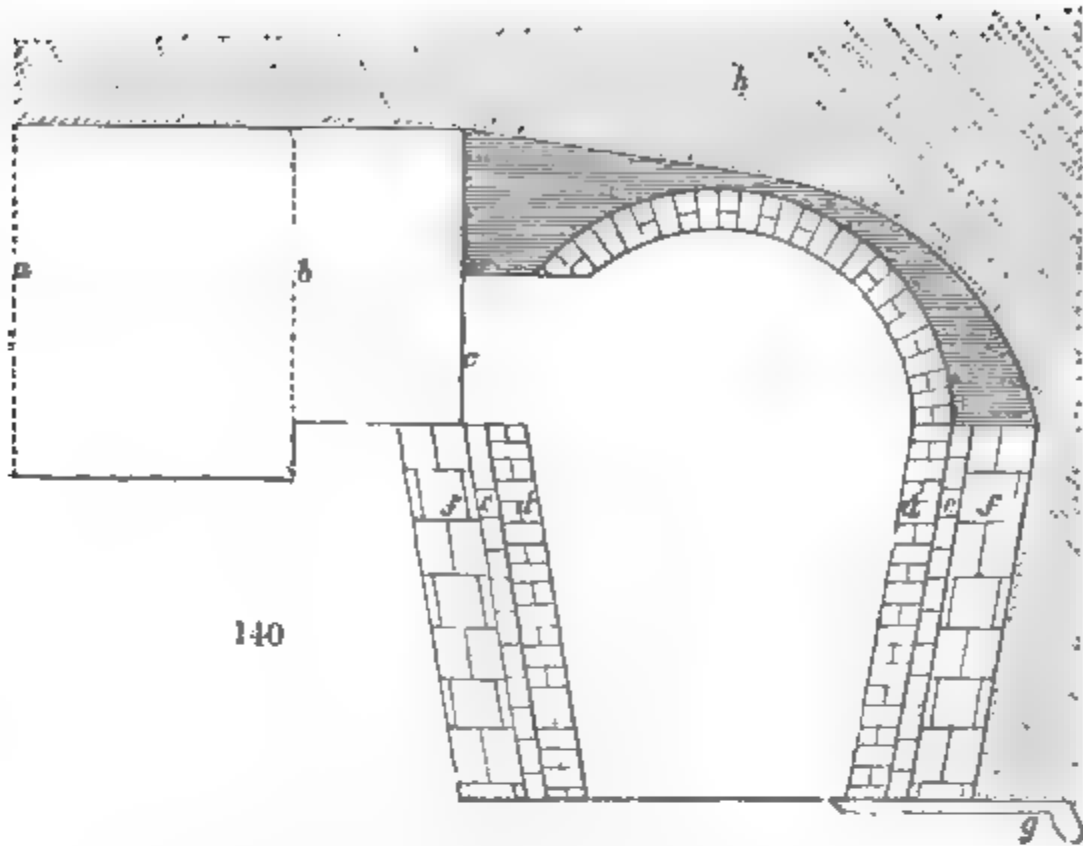
Erratum. — Sir, In the notice of my two melons (p. 338.) I see my employer's name is misspelt. His real name is *Tunno*, instead of *Punno*. Should you think my other letter worth publishing, you will no doubt, after this, state it correctly. Such mistakes are easily made; and the blame, if any, is more likely to rest with the writer than the compositor. — *J. Holland. Taplow Lodge, September 15. 1830.*

Errata. — P. 495., for "*Arniston Hall*" read "*Ormiston Hall*." P. 601., line 7 from the bottom, for "*scale*" read "*scape*."

ART. IV. *Queries and Answers.*

GLAZING with Lead Laps. — In answer to "A Subscriber" (p. 500.), I can assure him, from long experience, that glazing with lead between the squares (lead laps, as they are called) will prevent their cracking. I know a large green-house, the roof of which is glazed in this way, which was done twenty years ago, and to this moment not a pane of glass has been cracked in it, unless by accident; and I can further assure him that no green-house preserves more plants through the winter than the house alluded to. This is a subject that has undergone a great deal of discussion, and many fantastical shapes have been recommended for the form of the squares; but these did not break the spell: where the glass came in contact many of the squares would be cracked. I am at a loss to assign the cause, and I do not think it occasioned by the frost, though certainly a very rational way of accounting for it; for, to the best of my recollection (now many years ago), on my first erecting a green-house so many of the squares cracked that I had the lights taken down and reglazed with lead laps, long before the winter had commenced. Yours, &c. — *Cultivator. September 30. 1830.*

Proper Size for an Ice-house. — Sir, Three years ago I had an ice-house built, of the following dimensions; viz. $3\frac{1}{2}$ ft. diameter at bottom, 7 ft. at the widest part, and $10\frac{1}{2}$ ft. deep. The well is sunk in a bed of gravel, 8 ft. below the surface; the bottom of the pit is paved with a drain of 3 in. square, which carries the waste ice into the gravel, as will be seen in the annexed sketch. (*fig. 140.*) The ice-house is entered through a passage of 8 ft. in length, with sliding doors or boards next the wall; and 3 ft. from that is another oaken door, the interval I always fill with straw. The first year



a, Front oak door. b, Second door. c, Sliders, coming out one board at a time. d, 3-inch brick wall. e, 4-inch cavity. f, 14-inch stone wall. g, 3-inch drains. h, Soil on top.

I filled the house with well-broken ice, sprinkling a little common salt; and it was all melted by the beginning of June. Last year I filled it according to the plan recommended by Mr. James Young (Vol. III. p. 138.); but the ice had all disappeared by the middle of August. The passage part is imperfectly finished, it being only covered with oak slabs, with about 3 ft. of clay, so that the wet comes in sometimes. Is the house too small to contain a sufficient body of ice to last all the year? I was compelled to the above dimensions, not from want of room, but from my employer considering it quite large enough. If it is large enough, how is it to be filled so as to insure the ice keeping all the year? An answer in your December Number will greatly oblige, Sir, &c. — *W. P. Vaughan. Archdeaconry, Brecon, September 9, 1830.*

American Potatoes. — What is the reason that American potatoes, when planted in England, canker, produce such large tops, and, when taken up, are found to have produced only two or three potatoes at a root? — *S. September, 1830.*

A Collection of Gooseberries for prolonging to the utmost the Season of that Fruit. — Sir, Intending to make a plantation of gooseberries, I wish for some of each colour, some for size, others for flavour, and also to know at what period they ripen, that, by having some of each size and colour, that will come in succession from a very early to a very late period, I may enjoy the fruit for a much longer time than I now can. I should feel much obliged if you could give me this information, as also any other peculiarities of the different sorts of gooseberries, and inform me where I could obtain the plants. — *Edmund Vallance. Brighton, October 9, 1830.*

Hybrid Melons. — Sir, In answer to your correspondent P. Lauder (p. 502.), I send you the following observations: — That my own experience proves the impossibility of any fecundation, either by artificial or natural means, taking place between the *Cucumis Melo*, *C. sativus*, and any species of *Cucurbita*. My experiments have been very numerous, and carefully,

conducted, but invariably without effect; neither will the *Cucurbita Citrulus* mule with any other species of the same genus. With respect to other Cucurbitaceæ I cannot as yet decide. I have endeavoured to fecundate the *Cucumis Anguria* (which in p. 506. you erroneously name Snake Cucumber) with the pollen of the melon, but without any result. Thus far from my own experience. But from that of M. Sageret, than whom no one is better qualified to decide, we learn that not only will not the melon, cucumber, and gourd mule, but that there are six distinct species of *Cucurbita* which are equally incapable of receiving fecundating influence, the one from the other. The *Cucumis Melo*, *Dudaim*, *Châte*, and *flexuosus* will all mule one with the other. I possess from him hybrids obtained by the mixture of each.

Your reviewer has committed a most extraordinary and unaccountable error in Vol. IV. p. 383., where, in reviewing the *Annales de la Société d'Horticulture*, he states, on Sageret's authority, that the melon "is liable to be stained by the qualities of the cucumber," and that "by artificial or accidental adhesion different properties may be conveyed along the branches," for neither of which is there the least foundation: since to the former his opinion, as there stated, is directly opposed; and, to support the latter, there is not a tittle of evidence.

If any facts should have come to the knowledge of your correspondents disproving the above statements (and I own I have heard of strange hybridisations), I shall be most happy to be made acquainted therewith, and to have it put in my power to witness it by the present of a few seeds. I have grafted the melon on the cucumber, and both of them on the gourd, but without any extraordinary result. I am, Sir, &c. — *J. C. K. Levant Lodge, Aug. 31.*

Fuchsias and Hydrangeas. — I happen to have a little bed of fuchsias, and also of hydrangeas. Can I keep them in the ground through the winter, and how? — *Seragenarius. Waltham Cross, Sept. 19.*

Mulch them well with dry litter, fronds of fern, firs, or leaves, and then thatch the mulch with wheat straw or reeds, so as completely to throw off the rain. — *Cond.*

ART. V. *Horticultural Society and Garden.*

SEPT. 21. — Read. On the State of Horticulture in Ross-shire; by Sir G. S. Mackenzie, Bart. F.H.S.

Exhibited. A specimen of the *Georgina A'nton*, from Mr. Jas. Sutton of Andover. Flowers of Georginas, from Mr. Chapman, gardener to the Marquess of Stafford, St. James's. Seedling Apples, from the Rev. Peter Rashleigh, F.H.S.

Also, from the Garden of the Society. Four sorts of Lupines, seven sorts of *Ceanothus*, *Tagetes lucida*, *Agératum mexicanum*, *Lavatera triméstris*, *Clarkia pulchella*, China Asters, *Nigella hispánica*, *Cladanthus arábicus*, *Málope malacoides*, *Schizanthus pinnatus*, *Málva miniata*, *Iberis umbellatus*, three sorts of Pentstemons, *Catananche cærúlea*, a collection of Georginas and Anemone-flowered Georginas, *Calceolaria diffusa*, *Quisqualis indica*, *Agératum coelestinum*, *Dracocéphalum speciosum*, fourteen sorts of Pears, seventeen sorts of apples, two sorts of plums, four sorts of Peaches, two species of *Vaccinium*, *Couve tronchuda*, *Chou à grosse côtes vertes*, *Brássica* from Pekin.

Oct. 5. — Read. The Meteorological Journal kept in the garden of the Society, to July, 1830.

Exhibited. Beddington Muscadine Grapes, from Edmund Tattersall, Esq. F.H.S. This was a variety with small but very handsome bunches,

and a powerful Frontignac flavour : it appeared to be the Chasselas Musqué. A Seedling Pear and a Seedling Apple, from Mr. J. Oliver, gardener at Combe Abbey, near Coventry. Wood of the Gum Sandarach tree, from Mr. Drummond Hay of Tangier. Black Hamburg Grapes, grown without fire-heat, from John Allnutt, Esq. F.H.S. This was a single bunch of much beauty, perfectly well ripened. Two Apples, named from Mr. Robert Clews, F.H.S. *Stachys palustris*, from Mr. Green of 23. Alpha Road. The specimens had been forced in a pot, which appeared a better mode than growing in the open ground. Seedling Camellia, from Mr. George Press, gardener to Edward Gray, Esq. F.H.S. Camellias, from John Allnut, Esq. F.H.S. Seedling Georginas, raised in Lincoln's Inn, from Mr. John Maher, F.H.S. A double Sunflower, from Mr. John Maher, F.H.S. Three sorts of Seedling Georginas, from Mr. Adam Paul, F.H.S.

Also, from the Garden of the Society. *Pentstemon atropurpureum*, *Verbena chamaedrifolia* and *Aublétia*, *Catanánche cærúlea*, *Ibèris umbellatus*, *Tagètes lùcida*, *Chelone barbata*, *Málva miniata*, *Schizánthus pinnatus*, *Arctòtis anthemöides*, five varieties of *Ænothèra*, *Cladánthus arábicus*, *Eschschóltzia califórnica*, *Agératum mexicànum*, *Málope malacöides*, *Nigélla hispánica*, three sorts of *Phlóx*, *Clárkia pulchélla*, *Stèvia purpurea*, *Zínnia multiflora*, Poppy Anemones, *Galárdia aristata*, *Málva purpurata*, *Coreópsis lanceolata*, Georginas, Anemone-flowered Georginas, twenty-seven sorts of Pears, thirteen sorts of Apples, seven sorts of Peaches, Buck's Seedling Pine-apple.

Oct. 19. — *Read.* Note upon the Cultivation of the *Convólulus Batatas* ; by Mr. James Duncan, under gardener in the garden of the Horticultural Society.

Exhibited. A Sweet Melon of Ispahan, and a new Pine from Jamaica, from T. A. Knight, Esq. Pres. &c. Both these proved excellent ; the former was smaller than the specimen received from Mr. Knight in the middle of the summer, but nearly as good. Marie Louise, Duchesse d'Angoulême, Beurrée Diel, and Gloux Morceaux Pears, from Lord Farnborough. Seedling Apple from the old Golden Pippin, and Barossa Apple, from Jos. Warner, Esq. Ten sorts of Apples, Gansell's Bergamot Pear, and Quinces, from Robert Francis, Esq., Ivy House, Canterbury. A Seedling Apple, from Mr. Smith of Ilford.

Also, from the Garden of the Society. *Tagètes lùcida*, three varieties of *Ænothèra*, *Cladánthus arábicus*, *Málope malacöides*, *Catanánche cærúlea*, Asters, twenty-four sorts of Pears, twelve sorts of Apples, Beets, Sweet Potatoes, in illustration of the Note read this day from the Garden.

The late Librarian of this Society, Mr. Thomas Goode, having relinquished his situation, in consequence of the recommendation of the Committee to "make a reduction in the establishment," has, as we are informed by a circular, "determined to apply himself to business," that is, to trade. We heartily commend this determination on the part of Mr. Goode. Of all the modes of procuring the means of subsistence, short of that of living on one's own land, the most independent is that of trade. What is called a profession, a clerkship, or an official situation under government or in some public office, used to be considered "more genteel ;" but this antiquated idea is fast passing away. Clerks and persons in offices were held to be more genteel, because in former times, when men were divided into casts or ranks, such, for example, as nobles, clergy, peasantry, &c., the freedom from hard work, and the comparative skill and talent required in order to be able to read and write, created, in the occupation and style of the clerk, some allusion to the clergyman or the noble ; hence attorneys and others were styled gentlemen by law : but in the present day, when almost all tradesmen are highly cultivated and enlightened, and equally well dressed and polite with noblemen, the idea of one honest mode of procuring a living being more genteel than another is most unphilosophical and

absurd. The gentility in the present day depends less on the rank pursued, than on the intellectual and moral character, and the style of life, of the pursuer. Mr. Goode, as a dealer in china and earthenware, will obtain the same measure of respectability and gratitude from all those who knew him, that he merited and justly obtained as a merchant and accountant; and as to his own particular happiness, and that of his family, we should think it would be much greater, because he must be accompanied by a much higher sense of independence. During the nearly twelve years that Mr. Goode was in office we have never received the most unremitting attention (certain impediments to the use of the library, noticed Vol. V. p. 86. and see note, did not obstruct him). We have already recommended his wasp glasses (Vol. V. p. 86. and (on the cover, we believe) a most valuable and elegant invention of Mrs. Goode's, on the principle of the cupping-glass, for the relief of noses in weaning children; and we now again cordially and conscientiously recommend him as successor to the old established house in Mill Street, Great Street, for "every article in china, glass, earthenware, &c., of the best manufacture, at moderate prices." — *Cond.*

The Horticultural Society has been ridden almost to death, and is now rousing itself; but its constitution seems to have been somewhat injured. There are hopes of its purgation and ultimate restoration, notwithstanding a debt of 19,000*l.* which the Committee of Enquiry has ascertained to exist. This, after all, will not be without its advantage to science, if it put a stop to *house lists* named by one or two persons, to making complacent councillors, and to auditing the accounts without examining every item, or to omitting even that form altogether. (*Prof. Babbage* in the *Ed. Jour. Science* for July, 1830, p. 76.)

The Horticultural Society, we are happy to say, is now going on remarkably well: a considerable sum has been appropriated to paying off the debt; economy, as we believe, prevails in every department; and there is an influx of fellows, including ladies, which, though not great, is yet regular, and certainly much greater than we expected.

The Chiswick Garden looks as well as ever we expect it to do till the plan is entirely altered. Since the absurd regulations of keeping the gates closed against fellows and their friends till one o'clock, and of sending a spy round with every visitant, have been abolished, it may be visited with something like gardening feelings. Any one, whether he has subscribed to the garden or not, may ask for whatever he wishes; and if it is in abundance, or can be spared, he will obtain it without the ceremony of a month's correspondence, and the postage of a score of letters: in short, there is now something like that equality of privilege and good feeling which ought to exist in every society. There has been a good crop of pears, and the fruit room affords a very interesting spectacle. Mr. Thompson, its curator, and the foreman of the fruit department, has very great merit: he has taught himself both the French and German languages, in order to be able to read foreign works on fruits; and he is preparing for us a catalogue of synonymes and descriptions of all the varieties that have fruited in the garden, which will be invaluable to the horticultural world, and especially to nurserymen. The latter will now feel the absolute necessity of beginning *de novo* with their lists of pears, and getting their grafts from the Chiswick garden. In ten years, it will not be the fault of the Horticultural Society, if there is one bad sort of pear sold in the streets of any town in the island: all the old trees may be regrafted and in full bearing by that time. The Council of the Society has kindly permitted Mr. Thompson to furnish us with a catalogue of synonymes and short descriptions of pears and all other fruits, for our Supplement to the *Encyclopædia of Gardening*; and we have no doubt the value of such a catalogue will be duly appreciated by the public.

The trees in the arboretum have grown remarkably well this moist season.

We have had a list made, and the period of their defoliation and the autumnal colour of their leaves noted down, by Mr. O'Halloran, an intelligent and industrious young journeyman; and we hope next spring to procure, with the approbation of the Society, through the same individual, the period of foliation, the colour of the opening buds and young leaves, and various other particulars. We shall, at the same time, take a portrait of each species to one and the same scale; and, by comparing these with the ages of the specimens, the comparative rapidity of growth under the same circumstances will be obtained. This information, with others which we have not space to mention, is for the use of our *Arborètum Britànnicum*. (p. 718.) For the same object we have had a list made of the defoliation and autumnal tints of the principal deciduous trees in the pleasure-ground at Kew; and the same, accompanied with portraits, of the unrivalled arboretum of Messrs. Loddiges. We earnestly request all the assistance which our readers can afford us, particularly as to foliation and defoliation on different soils; say calcareous, argillaceous, siliceous, peaty or vegetable soils, and water-fed soils. Portraits of the shapes of full-grown trees, not trees going to decay, will also be highly acceptable; and for whatever is sent and made use of, a return will be made in kind, varying, according to the nature of the information, from a copy of our *Manual of Cottage-Gardening*, or of the Supplements to the Encyclopædias, to the *Encyclopædia of Plants* or the *Illustrations of Landscape-Gardening*. — Cond.

ART. VI. *The Royal Gardens.*

THE monopoly which Mr. W. T. Aiton enjoyed of Kew, Kensington, Buckingham Palace, Hampton Court, Cumberland Lodge, the Royal Lodge, Virginia Water, and we are not sure that we have included all, has been very properly broken down. Mr. Aiton is now limited to the botanic garden at Kew: his brother, who before had Windsor, is now limited to the kitchen-garden at Kensington. Hampton Court is given to Mr. Tyrrel; Windsor to Mr. Macfarlane; the kitchen-garden at Kew to Mr. Godfrey, formerly gardener to Admiral Harvey, in Essex. As the progress of Buckingham Palace has been stopped, the present king not intending to live there, it is probable that no gardener will be appointed; and the same may be said as to the Royal Lodge at Windsor, which is already in part pulled down. The pleasure-ground at Kew, it is said, will be put under a separate gardener; and we have heard Mr. Gardiner, son of Colonel Gardiner, mentioned as destined to fill the situation. We are not sorry to mark these changes; though we think it rather too much to deprive Mr. Aiton of two of the departments of Kew. But what astonishes us most is, that, deprived of these two, he should have accepted of the third. We can only account for this trait in his character, by supposing that the habits of a court gardener have a tendency to repress those feelings which ordinary gardeners, like ourselves, would consider proper spirit and manly independence.

One thing we must be allowed to regret, and that is, that the forcing department at Kensington was not put entirely under the control of Mr. Plimley. A better pine and grape grower, or a more worthy man, does not exist. We have witnessed his unwearied care and assiduity, attended by the most brilliant success, during the last fourteen years; withholding, at his own request, lest it should offend Mr. Aiton, that praise he so well merited. His salary, we understand, has been little more than the wages of a journeyman. We will venture to assert, that he is as worthy of any gardener's situation in the gift of the crown as Mr. Aiton himself; and we sincerely hope his deserts may yet meet with their due reward from so considerate and kind-hearted a master as William IV.

ART. VII. Covent Garden Market.

<i>The Cabbage Tribe.</i>		From			To					From			To			
		£	s	d	£	s	d			£	s	d	£	s	d	
<i>Cabbages, per dozen</i>																
White		0	0	4	0	0	9	<i>Peppermint, dried, per doz.</i>		0	0	0	0	1	0	
Red		0	2	0	0	5	0	<i>bunches</i>		0	0	0	0	1	0	
Plants, or Coleworts		0	1	0	0	2	0	<i>Marjoram, per doz. bunches</i>		0	0	0	0	1	0	
Savoy, per dozen		0	0	9	0	1	3	<i>Savory, per dozen bunches</i>		0	0	0	0	2	0	
Cauliflowers, per dozen		0	1	0	0	3	0	<i>Basil, per dozen bunches</i>		0	0	0	0	2	0	
Broccoli, per bunch:								<i>Rosemary, green, per dozen</i>								
White		0	0	6	0	2	0	<i>bunches</i>		0	0	0	0	6	0	
Cape		0	0	6	0	0	9	<i>Lavender, per doz. bunches</i>		0	0	0	0	2	6	
<i>Legumes.</i>																
Kidneybeans, scarlet, per		0	1	0	0	1	6	<i>Tansy, dried, per doz. bun.</i>		0	0	0	0	1	0	
half sieve								<i>Stalks and Fruits for Tarts,</i>								
<i>Pickling, &c.</i>																
<i>Tubers and Roots.</i>																
Potatoes	per ton	4	0	0	4	10	0	<i>Tomatoes, per half sieve</i>		0	2	6	0	5	0	
	per cwt	0	4	0	0	5	0	<i>Capitums, per hundred</i>		0	5	0	0	16	0	
	per bush	0	2	0	0	2	6	<i>Edible Fungi and Fuci.</i>								
Kidney, per bushel		0	2	6	0	3	6	<i>Mushrooms, per pottle</i>		0	1	6	0	0	0	
Scotch, per bushel		0	2	6	0	3	0	<i>Morrels, dried, per pound</i>		0	14	0	0	0	0	
Jerusalem Artichokes, per								<i>Truffles, per pound:</i>								
half sieve		0	0	9	0	1	8	<i>English, green</i>		0	4	0	0	0	0	
Turnips, White, per bunch		0	0	1	0	0	2	<i>Foreign, dried</i>		0	14	0	0	0	0	
Carrots, per bunch		0	0	4	0	0	6	<i>Fruits.</i>								
Parneys, per dozen		0	0	9	0	1	3	<i>Apples, per bushel:</i>								
Red Beet, per dozen		0	1	0	0	1	6	<i>Desert</i>		0	2	0	0	10	0	
Salady, per bunch		0	0	9	0	1	0	<i>Ribston Pippins</i>		0	9	0	0	15	0	
Horseradish, per bundle		0	1	6	0	4	0	<i>Scarlet Pearmain</i>		0	8	0	0	10	0	
Radishes								<i>Downton Pippin</i>		0	2	0	0	10	0	
Red, per dozen hands (24								<i>Golden Pippins</i>		0	10	0	0	12	0	
to D each)		0	0	8	0	0	10	<i>Baking, per bushel</i>		0	5	0	0	6	0	
White Turnip, per bunch		0	0	1	0	0	2	<i>French</i>		0	4	0	0	5	0	
<i>The Spinach Tribe.</i>																
Spinach	per sieve	0	1	0	0	1	6	<i>Reinette Grise</i>		0	12	0	0	15	0	
	per half sieve	0	0	6	0	0	9	<i>Incomparable</i>		0	0	0	0	15	0	
Sorrel, per half sieve		0	0	9	0	1	3	<i>Pears, Desert, per ½ sieve:</i>								
<i>The Onion Tribe.</i>																
Onions:								<i>Chaumontel</i>		0	6	0	0	8	0	
Old, per bushel		0	4	0	0	6	0	<i>St. Germain</i>		0	7	0	0	12	0	
For Pickling, per ½ sieve		0	3	6	0	6	0	<i>Autumn Beurée</i>		0	8	0	0	10	0	
Leeks, per dozen bunches		0	1	6	0	0	0	<i>Crassane</i>		0	10	0	0	12	0	
Garlic, per pound		0	0	8	0	1	0	<i>Swan's Eggs</i>		0	3	0	0	5	0	
Shallots, per pound		0	1	0	0	1	4	<i>Baking</i>		0	3	0	0	3	6	
<i>Asparaginous Plants,</i>																
<i>Salads, &c.</i>																
Artichokes, per dozen		0	2	0	0	3	0	<i>Quinces</i>		per half sieve	0	2	6	0	3	6
Lettuce, Cos, per score		0	0	9	0	1	3	<i>per dozen</i>			0	0	9	0	1	0
Endive, per score		0	1	0	0	2	0	<i>Almonds, per peck</i>			0	3	0	0	0	0
Succory, per bunch		0	0	0	0	0	2	<i>Walnuts, per bushel</i>			0	12	0	1	0	0
Celery, per bundle (12 to 15)		0	0	6	0	1	6	<i>Chestnuts, per peck:</i>								
Small Salads, per punnet		0	0	2	0	0	3	<i>English</i>		0	1	6	0	2	0	
Watercress, per dozen small								<i>French</i>		0	4	0	0	8	0	
bunches		0	0	6	0	1	0	<i>Pilberts, English, per 100 lbs.</i>		4	0	0	3	10	0	
Burnet, per bunch		0	0	0	0	0	3	<i>Pine-apples, per pound</i>		0	6	0	0	10	0	
<i>Pol and Sweet Herbs.</i>																
Parsley, per half sieve		0	1	0	0	1	3	<i>Grapes, per pound:</i>								
Tarragon, per doz. bunches		0	0	0	0	4	0	<i>Hot-house</i>		0	3	0	0	6	0	
Purslain, per punnet		0	0	6	0	0	9	<i>Spanish</i>		0	1	6	0	2	6	
Fennel, per dozen bunches		0	0	0	0	2	0	<i>From Holland</i>		0	1	9	0	2	6	
Thyme, per dozen bunches		0	0	0	0	2	6	<i>From Spain</i>		0	0	8	0	0	10	
Sage, per dozen bunches		0	0	0	0	2	0	<i>From Portugal</i>		0	0	6	0	1	0	
Mint, per dozen bunches		0	0	0	0	2	0	<i>From the open wall</i>		0	0	4	0	0	8	
								<i>Melons, English, per pound</i>		0	1	0	0	1	3	
								<i>Oranges</i>		per dozen	0	1	6	0	3	0
								<i>per hundred</i>			0	10	0	1	4	0
								<i>Lemons</i>		per dozen	0	0	9	0	2	0
								<i>per hundred</i>			0	4	0	0	16	0
								<i>Pomegranates, per dozen</i>			0	4	0	0	8	0
								<i>Brazil Nuts, per bushel</i>			0	12	0	0	16	0
								<i>Spanish Nuts, per bushel</i>			0	0	0	0	14	0
								<i>Barcelona</i>			0	0	0	0	20	0

Observations.—Our supplies of fruit have, up to this time, been much more plentiful than might have been expected from the known state of the crops throughout the home districts, which have not been generally more than half an average. From many parts of Kent, which last season at this period afforded very heavy supplies, at present not a bushel is sent; from others not in the proportion of one to five. From Essex, which last year furnished us liberally, hardly a bushel is to be found,

except a limited quantity of the finer sorts from the orchard of Mr. Curtis of Glazenwood. This gentleman's establishment deserves the particular attention of your readers, as having been created entirely by his own application and industry, and at his own expense, in a part of the country where, even to this hour, hardly any thing in the shape of nursery or garden ground is to be found, and in a measure remote from the markets and demands for the articles usually propagated; yet, despite of all difficulties, he has succeeded in cultivating almost all the best known varieties of apples and other fruits. He also has for sale an extensive collection of roses, very many excellent American plants in a flourishing state without peat, a fine selection of splendid georginas of his own raising from seed, and almost every article generally to be found in the London nurseries.

The supplies being so short, the prices have become proportionately higher, and may continue so for a time, until the fruit from the farther districts is fit for transport, or until the prices may warrant the introduction of foreign fruits; the duties upon which being high, will not allow the inferior varieties to be imported with any chance of advantage to the dealers. Some few cargoes from Jersey have already been received; but these, as coming from a British settlement, are not liable. A small lot of French Reinettes grises have been imported, from which I have quoted the prices in the list. A few barrels of American apples have also arrived, but, from having been packed much too early, were quite rotten. Pears of the varieties enumerated in the list are scarce, and consequently high in price; and it is yet too soon to expect any of the better sorts from France. Grapes have been very scarce, such as are fit for table more especially: although the crop on the walls was generally good, but few have been perfected. The supply from Holland has not been so large as usual, nor of the fine quality and size as heretofore; but, in consequence of large arrivals from Spain and Portugal in barrels and jars, the prices have been kept materially lower than might have been expected.

Respecting vegetables, little worthy of notice has occurred since my last. We have had an ample supply of autumnal cauliflowers of very superior quality, so large and close as to be quite equal to many that were furnished during the summer. This is not a usual occurrence, and may be attributed to the prevalence of fine warm weather following so closely on the humid summer. Broccoli of the Cape variety has also been sent plentifully, of excellent quality, and proportionately cheap. Some little of Grange's cauliflower, or impregnated, has also appeared; but it is not yet in season. Coleworts, cabbages, and savoys have been abundant and of excellent quality, and, from the continuance of the present very fine weather, are likely to be found so throughout the early part of winter; and, if the weather should remain open and warm, there can be little doubt that the supplies after Christmas will also prove plentiful. Turnips at present are of excellent quality, and in abundance, principally of the Hertfordshire White and the Early Stone. No other sorts appear to be cultivated for our markets, although some most suitable varieties, such as the Yellow Stone, the Yellow Scotch or Aberdeen, and the Maltese, are found to be well adapted for table, and are actually cultivated extensively for that purpose in the west and north of England and in Scotland. It cannot be doubted that the taste of the people of London would be readily reconciled to articles of finer flavour and quality than those they may have been accustomed to, although somewhat different in appearance and colour. The supply of potatoes has by no means been plentiful, which in a measure may be attributed to the circumstance of the growers being very generally occupied during the month of October in preparing their grounds for wheat; and as the season has been so particularly fine, no apprehension of injuries to the potato crop from early frost need be apprehended. However, it is clearly

ascertained that the weight from the ground is not so great as usual, which, in a great measure, arises from the superabundant moisture and deficiency of solar heat throughout the season. The prices at present are moderate, but I think may be expected higher. — *G. C.* Nov. 1. 1830.

ART. VIII. *Provincial Horticultural Societies.*

SUSSEX.

CHICHESTER Horticultural Society.—June 21. Prizes were awarded as under:—

Plants and Flowers. Cockscombs: 1. Mr. Hammond; 2. Mr. Cakebread, gardener to Messrs Henty. Seedling Geraniums. White Ground: 1. Mr. Harrison; 2. Mr. Groundsell. *Scilla* Ground: 1. Mr. Groundsell; 2. Mr. Harrison. *Gloxinia speciosa*, Mr. Cakebread. *Hentia*, George the Fourth, Rev. W. Watkins. *Fuchsia gracilis*, Mr. Gorsuch. Carnations, Mr. Collyer. *Erythrina Crista galli* (this was a magnificent specimen), Mr. Harrison. *Geranium echinatum* (growing in moss), Mr. Collyer, gardener to E. Woods, Esq. *Amaryllis speciosa*, Mr. Perry, gardener to J. Hawkins, Esq. Azaleas, Mr. Hammond. *Fuchsia microphylla*, Mr. Groundsell. *Thunbergia alata*, Mr. Sims. Box of Cut Flowers: 1. Mr. Sims; 2. Mr. Collyer. Box of Cut Roses: 1. Mr. Hammond; 2. Mr. Gorsuch. Pinks: 1. Mr. Reynolds; 2. Mr. Feilder, gardener to C. S. Dickens, Esq.; 3. Mr. Gorsuch. Seedling Pinks: 1. M. Downer; 2. Mr. Quennell, gardener to the Rev. — Bouverie. Ten Geraniums, Mr. Holding. — *Fruit.* Pine, Mr. Bradley, gardener to Lord Arran. Melons: 1. Mr. Coates, gardener to the Rev. G. Porcher, Oakwood; 2. Mr. Gorsuch, gardener to the Bishop of Chichester; 3. Mr. Hammond, gardener to Messrs Humphreys. Grapes: 1 and 2. Mr. Saunders, gardener to W. C. Newland, Esq.; 3. Mr. Harrison, gardener to the Earl of Egremont. Strawberries: 1. Mr. Davies, gardener to Mrs. Williams; 2. Mr. Hammond, gardener; 3. Mr. Gardiner, gardener, Bognor; 4. Mr. Hodge, gardener to the Rev. S. J. Tuffnell; 5. Mr. Sims, gardener to W. Leves, Esq. Cherries, Mr. Mollard, gardener to R. Merricks, Esq. Apples. Cockle Pippins, Mr. Downer, gardener to the Rev. S. Barbut. — *Culinary Vegetables.* Cucumbers, Mr. Sims. Celery, Mr. Davica. Horseradish, Mr. Costa. Mushrooms, Mr. Holding. Potatoes, Mr. Groundsell, gardener to J. Groggen, Esq. Lettuce, Mr. Gorsuch.

July 31. Prizes were awarded as under:—

Plants and Flowers. Picotees: 1. The Rev. W. Watkins; 2 and 3. Mr. Hodge, gardener to the Rev. S. J. Tuffnell. Carnations: 1. Mr. Gorsuch; 2. Mr. Reynolds. *Humea elegans*, Mr. Bowers. *Thunbergia alata*, Mr. Gorsuch. *Cactus speciosissima*, Mr. Maller, gardener to Miss Merrick. *Hoya carnea*, Mr. Downer. Cockscombs, Mr. Collyer. Chionias, Mr. Coates. *Fuchsia gracilis*, Mr. Davies, gardener to J. Penfold, Esq. Dwarf Cockscombs, Mr. Hammond. Box of Cut Flowers, Mr. Sims. Georginas: 1. Mr. Gorsuch; 2. Mr. Hammond. *Salvia fulgens*, Mr. Collyer. Two Stands of Flowers, Mr. Good, gardener to William Ridge, Esq. *Trevirana coccinea*, Mr. Cakebread. — *Fruit.* Pines: 1. Mr. Bowers, gardener to Lord Selsey; 2. Mr. Hislop, gardener to Mrs. Smith. Grapes. White: Mr. Coates, gardener to the Rev. G. Porcher; 2. Mr. Harrison, gardener to the Earl of Egremont. Black: 1. Mr. Cakebread, gardener to Messrs Henty; 2. Mr. Bowers. Melons: 1. Mr. Bowers, gardener, to Lord Selsey; 2. Mr. Hislop, gardener to Mrs. Smith; 3. Mr. Sims, gardener to W. Leves, Esq.; 4. Mr. Harrison, gardener to the Earl of Egremont. Gooseberries: 1. Mr. Softly; 2. Mr. Downer, gardener to the Rev. S. Barbut; 3. Mr. Gorsuch, gardener to the Bishop of Chichester. Peaches and Nectarines, Mr. Bradley, gardener to Lord Arran. Apricots, Mrs. G. Newland. Oranges and Lemons (this fruit was remarkably fine), Mr. Harrison. Green Gage Plums, Mr. Harrison. Orleans Plums, Rev. W. Watkins. Apples, Mr. Holding. Cherries: 1. Mr. Coates; 2. Mr. Gorsuch. — *Culinary Vegetables.* Celery: 1. Mr. Gorsuch; 2. Mr. Cakebread. Carrots: 1. Mr. Harrison; 2. Mr. Collier. Onions, Mr. Harrison. Lettuce, Mr. Good. Seedling Potatoes, Mr. James Gardner. — *S. L. H.* Chichester, September 16.

ESSEX.

The Chelmsford and Essex Floral and Horticultural Society.—September 13.

The first prize for named Georginas was awarded to the Rev. W. Jesse, for Veitch's *Grandiflora coccinea*, Veitch's *Beauty of Devon*, Veitch's *Rubella superba*, Veitch's *Victory*, Colville's *Perfetta*, Dennis's *Telegraph*, Wells's *Morning Star*, and the *Scarlet Turban*; the second to Mr. Edward Sorrell of Springfield nursery, for Marshall's *Purple*, Marshall's *Magnet*, Sorrell's *Princess Royal*, Colville's *Perfetta*, Mountain of Snow, Lord Grantham, *Scarlet Turban*, and *Crimson Superb*; and the third to Mr. Maraden of Chelmsford, for Inwood's *Donna Maria*, *Scarlet Turban*, *Black Turban*, *Rubioides*, Dennis's No. 16. *Archduke*, Wells's *Dwarf Yellow*, and *Dwarf Rosea*. A separate subscription having been entered into amongst the growers of seedling Georginas, several of them brought their stands of eight flowers; this caused a slight disagreement amongst some, who considered that large cultivators had a better chance of producing superior flowers than themselves, they being able only to bring forward a chance one. There being, however, no rule or regulation in the Society which could affect the separate subscription, selections were made by the judges from the stands, and the prizes given to Mr. Sorrell, Mr. Curtis of Glazenwood, and Mr. Hogg of Ingatestone. Mr. Sorrell received a prize for apples, and W. Wicks, Esq., for some fine peaches; a fine melon, produced by Mr. Saltmarsh, was much admired. (*Kent and Essex Mercury*, September 21.)

CAMBRIDGESHIRE.

Cambridgeshire Horticultural Society.—Sept. 15. The Show was larger and splendid than we recollect having witnessed since the establishment of the Society. Prizes awarded as under:—

Flowers: Georginas, Double (six best, one of a sort): 1. (medal) Cambridge Surprise, Mountain of Snow, *Rosa grandiflora*, Bohemia, *Rosa Constantia*, Wells's Dwarf Yellow, Mr. Widnall; 2. Surprise, Augustus, Wells's Yellow, Royal Lilac, *Aspasia*, Perfecta, Mr. Brewer. Georgina, Globe, Dark Crimson, Mr. Widnall. Seedling, Mr. Widnall. *Lobelia* (grown at King's College), Mr. Catling. *Fuchsia*, Mr. Brewer. Bouquet (Treasurer's), Mr. Gimson. — **Fruit.** Pine: 1. (medal) Queen, Rev. G. Jenyns; 2. Mr. Dall. Grapes, Black (not less than 1½ lb.): 1. Black Muscadine, Mr. Dall; 2. Black Hamburgh, Mr. Fordham of Hatley. White (not less than 1½ lb.): 1. White Aleatico, Mr. Dall; 2. Mr. Robert Nutter. Pot of Grapes: 1. Mr. R. Nutter; 2. Black Portugal, Mr. Widnall. Peaches (six best, three of a sort): 1. Purple Hative, Royal George, Col. Pemberton; 2. Buckingham, Mr. Serjt. Frere. Three best of any sort: 1. Royal George, Purple Hative, Noblesse, Colonel Pemberton; 2. Noblesse, Mr. Challis. Nectarines (six best, three of a sort): 1. Vanguard, Mr. Newman, Lord De la Warr's gardener; 2. Roman Elrue, Mr. Dall. Three best of any sort: 1. Mr. Charles Beales; 2. Murray, Rev. Geo. Jenyns. Cherries, Morello: 1. (42 to the lb.) Mr. Challis; a second prize would have been awarded to Col. Pemberton, but they were deficient in weight. Plums: two sorts, not less than six of a sort, Coe's Seedling, Green Gage, Mr. Challis; not less than six, Green Gage, Rev. Geo. Jenyns. Figs, Brown, Colonel Pemberton. Gooseberries (Red), Warrington, Mr. Challis. Currants: No first prize; 2. (grown at King's College), Mr. Catling. Melon: 1. Scarlet-fleshed, Christopher Pemberton, Esq.; 2. Black Rock, Mr. Biggs. Grown under a hand-glass: No first prize; 2. Scarlet-fleshed, Mr. Newman, Lord De la Warr's gardener. Apples, Table: 1. Spice Pippin, French Pippin, Codling, Mr. P. Cranfield; 2. Garrett's Pippin, Mr. Widnall. Pears, Table: Bergamot, Rev. George Jenyns. Filberts: No first prize; 2. Red Kernel, Geo. Jenyns, Esq. Strawberries: No first prize; 2. Raspberry, Rev. Geo. Jenyns. — **Culinary Vegetables.** Peas, Mr. Lestourgeon. Celery, White Solid, George Jenyns, Esq.

Cottagers' Prizes. Bouquet, James Tuck, Harston. Georgina, Joseph Beales, Cherryinton. China Asters, Jos. Beales, Cherryinton. Apples, Ribston Pippin, Golden Rennet, Jas. Bullen, Wimpole. Plums, James Tuck. Onions, James Tuck. Scarlet Runners, R. Maile, Wimpole. Cucumber, Joseph Beales.

Extra-Prizes. Broccoli, James Tuck. China Asters, Mr. Widnall. African Marigolds, Mr. Newman. Endive, No. 87. Onions, No. 99. Cucumbers, Mr. Searle. (*Cambridge Chronicle*, Sept. 17.)

GLOUCESTERSHIRE.

Bristol Horticultural Society.—July 27. Prizes were awarded as under:—

Plants. Stove and Green-house: 1. *Combrètum purpureum*, John Hurle, Esq.; 2. Lemon, John Prideaux, Esq. Hardy: 1. *Erica fragrans*, and 2. *Genista Státice*, Mr. Maule. Hardy Perennials: 1. *Oenothera speciosa*, Mr. Maule; 2. *Potentilla formosa*, Mrs. T. Bayley. Hollyhocks: Seedlings, Mr. Elbury. Hardy Annuals: 1. *Clarkia pulchella*, and 2. *Oenothera Lindleyi*, Mr. Maule. — **Flowers.** Carnations. Bizards, Scarlet: 1. Mr. Jacques; 2. Mr. Brookes. Crimson: 1. Mr. Maule; 2. Mr. Brookes. Pink and Purple: 1. Mr. Jacques; 2. Mr. Taylor. Seedlings: 1. Mr. Chambers; 2. Mr. Brookes. Flakes, Scarlet: 1. Mr. Jacques; 2. Mr. Taylor. Rose: 1. Mr. Maynard; 2. Mr. Brookes. Purple: 1. Mr. Brookes; 2. Mr. Taylor. Picotees, Purple: 1. Mr. Maule; 2. Mr. Taylor. Red: 1. Mr. Maule; 2. Mr. Taylor. Yellow, Mr. Taylor. Balsams, Mrs. Verney. Cockscombs: 1. Rev. Mr. Richards; 2. Mrs. Harford. Georginas: 1. and 2. Mr. Young. — **Fruit.** Pine-apples: 1. Black Jamaica, Mr. James Helps; 2. Black Antigua, W. P. Jillard, Esq.; 3. Green, J. Hurle, Esq. Grapes, Black: 1. Black Tripoli, R. Oakley, Esq.; 2. St. Peter's, P. J. Miles, Esq. White: 1. Syrian, Mrs. Harford; 2. Muscat, P. J. Miles, Esq. Melons: 1. Netted Rock, R. Oakley, Esq.; 2. Green-fleshed, Rev. Mr. Richards. Peaches: 1. and 2. P. Protheroe, Esq. Nectarines, P. Protheroe, Esq. Apricots: 1. Orange, Colonel Houlton; 2. John Prideaux, Esq. Cherries: 1. Morello, Colonel Houlton; 2. White Heart, W. Blathwayte, Esq. Apples, Early: 1. John Prideaux, Esq.; 2. Juneating, Col. Houlton. Pears, Early: 1. Mr. Taylor; 2. Fort du Roi [?], Mr. Pittard. Raspberries, Red, Mr. G. W. Hall. Gooseberries, Red: 1. Roaring Lion, and 2. Crown Bob, Mr. Cartwright. Green: 1. Miss Fewster; 2. James Parker, Esq. Yellow: 1. Rockwood, Mr. Cartwright; 2. Mr. W. Evans. Currants, Red: 1. P. Protheroe, Esq.; 2. W. Blathwayte, Esq. White: 1. James Parker, Esq.; 2. Mrs. T. Bayley. — **Culinary Vegetables.** Kidneybeans: 1. Mr. Maynard; 2. S. Bowden, Esq. Celery: 1. Mr. Sealey; 2. Mr. Maynard. Lettuce: 1. White Cos, Mr. S. Gerrish; 2. Brown Cos, Mr. Cartwright. Cauliflowers: 1. and 2. Mr. Maynard. Cucumbers: 1. Mr. Maule; 2. G. Goldney, Esq. Carrots: 1. Orange, Mr. Maynard; 2. Altringham, Mr. Maynard. Artichokes, R. Oakley, Esq. Cabbages: 1. D. Stanton, Esq.; 2. Westham, Mr. S. Gerrish. Turnips: 1. Mr. S. Gerrish; 2. Mr. Pittard. Vegetable Marrow, John Acraman, Esq. Spinach, Mr. Pittard. Beans, Windsor, Mr. Gregory.

Possessing superior Merit. Grumage Pippin [?] Apples, Mrs. L. Gregory. Filberts, Mr. R. Fry.

Cottagers' Prizes. Potatoes: 1. Edward Jones; 2. Elizabeth Dyer. Onions: 1. Elizabeth Martin; 2. John Shortman. Apples: 1. and 2. Richard Mason. Kidneybeans, W. Kingscott. Nosegay: 1. Sarah Cork; 2. Elizabeth Dyer; 3. John Hiron.

Censors. Messrs. Knapp, Fedden, Jacques, Masey, Lee, and Saunders. (*Bristol Mirror*, Aug. 7.)

Sept. 14.—The display of georginas, cockscombs, China asters, and other autumnal flowers, was excellent, particularly of those exhibited by our celebrated nurseryman Mr. Miller. On the grand stand we noticed a fine *Thunbergia alata*, from J. S. Harford, Esq.; *Pergularia odoratissima*, from Christopher George, Esq., Abbots'-Leigh; a fine collection of *Erica* and other plants, from Mr. Lee, Lawrence Hill, and Mr. Maule, Lower Easton; a fine specimen of *Cypripus Papyrus*, and *Musa coccinea*, from John Hurle, Esq.; *Witsenia corymbosa*, by H. Nugent, Esq., Bath; *Maurandya Barclayana*, and *Cypripedium insigne*, from Miss Bright, Ham Green; with a splendid collection of georginas, by Mr. Wheeler, of Warminster, Mr. Young, of Taunton, and many others. Prizes were awarded as under:—

Plants. Hardy Perennials: 1. *Erythrolæna conspicua*, and 2. *Matricaria grandiflora*, Mr. Maule. Green-house: 1. *Maurandya Barclayana*, Miss Bright; 2. *Amaryllis blanda*, H. Nugent, Esq.; 3. *Fuchsia gracilis*, Rev. W. Trevelyan. Stove: 1. *Cypripedium insigne*, Miss Bright; 2. *Cypripus Papyrus*, John Hurle, Esq. — **Flowers.** Georginas. Double Tall: 1. George Fisher, Esq.; 2. H. Nugent, Esq.; 3. and 4. Mr. Geo. Wheeler. Double Dwarfs: 1. Mr. Geo. Wheeler; 2. Mr. Maule: 3. and 4. Mr. Geo. Wheeler. Seedlings: 1. Colonel Houlton; 2. Mr. Maule. Cockscombs. Red: 1. O. Fedden, Esq.; 2. John Hurle, Esq. — **Fruit.** Pine-apples: 1. Cockscomb, 2. Otaheite, and 3. Black Jamaica, Mr. Burn, Tottenham Park; 4. Queen, Colonel Houlton.

Apples. Early Dessert: 1. Ronald's Golden Pippin, Rev. W. Trevelyan; 2. Peach Apple, E. Cartwright. Late: 1. Late Dessert, Mr. T. B. Miller; 2. Queen Pippin, and 3. Laxton Pear, Mrs. L. Gregory. Culinary: 1. Royal Kentish, H. Nugent, Esq.; 2. Keswick Codlin, Mrs. L. Gregory. Cider: House Apple, Mrs. L. Gregory. Seedling: 1. and 2. Mrs. L. Gregory. Pears: 1. Jargonelle, Mrs. Addington; 2. Brown Beurrée, Colonel Houlton; 3. Bergamotte du Bright; 4. Portbury, Mrs. Collings. Plums: 1. New Orleans, D. Stanton, Esq.; 2. Green Gage, Mrs. James; 3. Magnum Bonum, Mrs. Addington. Apricots: 1. Moor Park, J. N. Fackler, Esq.; 2. Moor Park, Mrs. H. Vaughan. Peaches: 1. Royal George, Samuel Waring, Esq.; 2. Galande, Mr. Burn; 3. Late Admirable, Mr. Pittard. Nectarines: 1. Newington, S. Waring, Esq.; 2. Pitminster, Mrs. Cartwright; 3. Red Roman, W. W. Davies, Esq. Melons: 1. Green Egyptian, C. L. Lewis, Esq.; 2. Melsom Melon [?], Mr. Maule. Filberts: 1. White, Mrs. Cartwright; 2. Mrs. H. Vaughan. Nuts: 1. Lambert, George Gordon, Esq.; 2. Cosford, Mrs. Robert In. Grapes. Black: 1. Black Damascus, H. F. Brooke, Esq.; 2. Hamburgh, Rev. T. Concy; 3. Hamburgh, George Sawyer, Esq.; 4. Hamburgh, R. Strachey, Esq. White: 1. White Muscat, R. Strachey, Esq.; 2. White Sweetwater, Rev. T. Concy; 3. Muscat, Mr. Geo. Verney. Out-of-doors: 1. White Sweetwater, Captain Langton. Cherries: 1. Morello, Mr. Burn; 2. Morello, Colonel Houlton. Damsons: 1. Mr. James Elbury; 2. Mrs. Cartwright. — *Culinary Vegetables.* Celery. Red: 1. Mr. Burn; 2. H. Meyers, Esq. White: 1. H. Meyers, Esq.; 2. Mr. Maynard. Broccoli: 1. Cape, Mr. Samuel Gerrish; 2. Cape, Mr. Sealey.

Superior Merit. — Coffee Tree, and *Musa coccinea*, John Hurle, Esq. Melon, Mr. W. Fenn. Erica Hartuelli, and *Amaryllis psittacina reginae*, H. Nugent, Esq. Jamaica Pine, Mr. James Helps. Altringham carrots, Mr. Maynard. Snake Cucumber, W. Blathwayte, Esq. Bath Cabbage, Rev. Mr. Richards.

Cottagers' Prizes. Apples: 1. John Nelmes; 2. Elizabeth Dyer; 3. George Allen. Turnips, John Watts. Potatoes: 1. Thomas Williams; 2. Thomas Shortinan; 3. Edward Jones; 4. Isaac Brookes. Nosegay, Sarah Cork. Spanish Nuts, Thomas Coles. Cabbage, Thomas Williams. Onions: 1. Thomas Williams; 2. Thomas Coles; 3. W. Kingscote; 4. W. Harvey. Scarlet Runners: 1. Isaac Brookes; 2. Thomas Williams; 3. John Turner.

The umpires were Messrs. Knapp, Donald, Ronalds, Rootsey, and Lee. (*Bristol Mr., Sept. 18.*)

WORCESTERSHIRE.

Worcestershire Horticultural Society.—Sept. 10. Prizes were awarded as under:

Plants. Stove or Green-house: 1. *Fuchsia cónica*, Mr. Smith; 2. *Erythrina Crista galli*, and 3. *Erica vestita fulgida*, Mr. Tapp; 4. *Calceolaria longifolia*, Mr. Smith. Hardy Annuals. China Pink, Mr. Smith. Perennials: 1. *Campanula pyramidalis caerulea*, Mr. Fuller. Cockscombs: 1. and 2. Sir H. Wakeman. — **Flowers.** Georginas, Dark: 1. Seedling, Mr. Tapp; 2. Smith's Rival, Mr. Smith; 3. Venustum, J. Taylor, Esq.; 4. Duchess of Kent, Mr. Beach. Crimson: 1. William the Fourth, and 2. Seedling, J. Taylor, Esq.; 3. Seedling, Mr. Tapp; 4. Seedling, Mr. Linton. Purple: 1. Helen, Mr. Beach; 2. *Purpurea globularia*, Mr. Smith; 3. Fanny, Mr. Beach; 4. Langley's Purple, Mr. Tapp. Scarlet: 1. *Aurántia speciosa*, Mr. Smith; 2. Royal William, 3. Scarlet Turban, and 4. Ignescens, Mr. Tapp. Yellow: 1. Lutea, J. Taylor, Esq.; 2. Sulphurea, Mr. Smith. Light: 1. Seedling, and 2. *Aurántia superba*, Mr. Tapp; 3. Princess Esterhazy, Mr. Beach; 4. Seedling, J. Bradley, jun., Esq. White: 1. Mountain of Snow, J. Taylor, Esq.; 2. Priscientissima, Mr. Smith. — **Fruit.** Cherries, Morello, Mr. Wood. Plums, Caledonian, H. Newman, Esq. Apples. Dessert, Peach Apple, Sir H. Wakeman. Culinary, Hawthornden, J. Taylor, Esq. Pears. Dessert, Jargonelle, R. Allies, Esq. Culinary, Cadillac, R. Berkeley, Esq. Peaches, Royal George, J. Taylor, Esq. Nectarines, Red Roman, J. Taylor, Esq. Grapes: 1. Black Hamburgh, Mr. Smith; 2. White Muscat, J. Taylor, Esq. Walnuts, Sir H. Wakeman. Filberts, Club, Sir H. Wakeman. — **Culinary Vegetables.** Carrots, Altringham, Sir H. Wakeman. Onions, Brown Spanish, Sir H. Wakeman. Celery, White Solid, Sir H. Wakeman; Red Solid, Sir H. Wakeman.

Extra-Prizes. Pines: 1. Brown Antigua (7 lb. 2 oz.), Mr. Wood; 2. Enville, Sir H. Wakeman. Melon, Rock Cantaloup, R. Nuttall, Esq. Peaches, Noblesse, J. Taylor, Esq. Plums, White Magnum Bonum, J. Taylor, Esq. Grapes, White Nice, J. Taylor, Esq. Dessert Apples, Sir A. Lechmere. Pears, Woodford's Marrow, Mr. Fuller. *Cucurbita claviformis*, J. C. Kent, Esq.

This exhibition was by far the most splendid we have seen since the formation of the Society. Four pines, from the garden of the Marchioness of Downshire, weighed 21½ lbs. each, being a distinct variety, and not one of them of the Providence kind. The prize plums (Caledonian) attracted much attention, the dish, twelve in number, weighing 43½ oz. Of two fine specimens of the shaddock tribe (*Citrus Médica*), exhibited by Mr. Smith, the largest 16½ in. in circumference, weighed 35 oz. A very curious specimen of vegetable (*Cucurbita claviformis*) was exhibited by J. C. Kent, Esq., which has the singular property of continuing its growth after a part has been taken off; the same gentleman likewise sent three fine specimens of green and purple-leaved kohlrabi, which attracted much attention. Of georginas, upwards of 800 specimens were placed on the stand. A blue *Campanula pyramidalis*, from the garden of Mr. W. Redding, stood upwards of 8 ft. high, and was completely covered with flowers. (*Berrow's Worcester Journal*, Sept. 16.)

MONMOUTHSHIRE.

Glamorgan and Monmouthshire Horticultural Society.—Newport, October 1.

The prizes were awarded as under:—

Plants and Flowers. Most beautiful Flower, Mr. Peter Potter, jun. Most curious Flower, Mr. Moggridge of Woodfield. Six China Asters, Hon. W. B. Grey. Six French Marigolds, Mr. Peter Potter, jun. Six African Marigolds, Sir C. Morgan. Twelve *Folia tricolor*, Mr. R. Hill. Six *Corcopes*, Mr. Peter Potter, jun. Georginas, Sir C. Morgan. Annuals, Hon. W. B. Grey. — **Fruit.** Table Apples, Mr. Prothero. Plums, Hon. W. B. Grey. Table Pears, Mr. R. Hill. Out-of-door Grapes, Mr. Prothero. Out-of-door Peaches, Mr. Prothero. Nectarines, Mr. R. Hill. Melon, Sir C. Morgan. — **Culinary Vegetables.** Celery, Mr. Prothero. Green Peas, Sir C. Morgan.

Hill Prizes.—Table Apples, Mr. Moggridge. Plums, Mr. Perkins. Georginas, Miss Moggridge. Most beautiful Flower, Mr. Moggridge.

Hill Cottagers' Prizes.—Apples, J. Williams, Blackwood Village. Basket of Vegetables, F. Malpus, Blackwood Village. Bunch of Flowers, B. Cole, Blackwood Village. Potatoes, W. Davies, Blackwood Village.

Valle Cottagers' Prizes.—Apples and Pears, E. Daniel, Castletown. Vegetables, M. Jenkins,

Overton, Sarah of Flowers, C Bay Hall-park of Potomac, M Jenkins Father's, D Wy.
Jama, Cuffee.

Salvia Przew. — Pruit and Flowers, Mr. James, Cochran. Flowers, Mr. Potter, son. (Fly
Gambrell, October 2.)

REFERENCES

Hereford Horticultural Society. — September 31. It may safely be stated that no previous season was there such an abundant and rich display of georginae, many of which measured 1 and 2 in. across the disk, and were well filled with petals. The prizes were awarded as under:—

Plant Green-house. *Erythrina Crispa* Gill, Miss Anna Parry — *Passiflora Georgiana* Andrews; 1 *Clusia*, and 2 *Spartocladia*, 1 *G. Canby*, Ray, 2 *Bland* Red, Mr. Crumpton. Crumpton 1 *Yucca* Son, Dr. J. G. Catcott, 2 *Wormshire* Hare, Mr. Goddard, 1 *Constitution*, T. C. Bridges, Ray, Scarlet 1 *Romance*, Mr. Hunt, 2 T. C. Bridges, Ray, 1 *Morning Star*, Mr. Hunt. Purple: 1 *Andromeda* T. C. Bridges, Ray, 2 *Purple* Velvet, Mr. Goddard, 3 Dr. J. G. Catcott. Light: 1 *Mountain of Snow* Mr. Hunt, 2 Dr. J. G. Catcott, 3 Mr. Crumpton. Above striped 1, and 2 Mr. Goddard. 1 R. J. Powell, Ray, both 1, 2, and 3 Dr. J. G. Catcott. — *Free Apple*, Early Dwarf 1 *Mountain* Pippin, Mr. T. H. Symonds, 2 *Summer* Quince, Mrs. J. Phillips, 2 *Orange* Dr. J. G. Catcott. Late Dwarf 1 *Vanguard*, Mrs. J. Phillips, 2 *Apple* New York, Mr. Crumpton. 1 *Carson* Apple Dr. J. G. Catcott. 1 *Early* Hawthorn Dr. J. G. Catcott, 2 *Winter* Callis, R. J. Powell, Ray, 2 *Flinders* Pippin, Dr. J. G. Catcott. Pear, Early Dwarf 1 *Comard*, Mrs. Symonds, 2 *Comard* 2 *Burgundy*, T. C. Bridges, Ray. Late Dwarf 1 *Brown Beauty* and 2 *Bon Christian* Dr. J. G. Catcott. Seedling. New varieties of *Perry* Fruit, 1 and 2 Dr. J. G. Catcott, of *Cherry* Fruit, Dr. J. G. Catcott. 1 *Orange* 1, *Black* Hawthorn. Mr. Lee 2 *Seedling*, Dr. J. G. Catcott. Pear 2 1 *Early* Hawthorn, R. J. Powell, Ray, 2 *Royal* Orange, 1 *G. Canby*, Ray, 2 *Vanguard*, Dr. J. G. Catcott. New variety 1 *Orange*, R. J. Powell, Ray, 2 *Roman*, J. G. Catcott, Mrs. Phillips Apple, Old Quince, C. G. Canby, Ray. *Plum*, Mrs. J. Phillips. (Harvard Journal, September 1891)

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Fortieth International Society. — Aug 23. The prizes were awarded as

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Mr. J. Watson of Fairfield presented a fine specimen of the *Lupinus harveyana*, a new plant.
(Mr. Howell, Aug. 20)

Hall Floral and Horticultural Society. — Sept 13. Prizes were awarded as

Flowers. Georgina, Society's Program. Caroline, Mr. Ross Dutton. B. Hawthorth
Pension, Summit of Perfection. Mr. Wm. Wesley White. 1. Marston, Mr. Doughton, 2 and
2. New Marston, Mr. Doughton, 3. French White, Mr. Dutton, 4, and 5. Marston, Mr. Doughton,
7, and 8. Perfection, Mr. Doughton. Fluk, Doughton, and Chilton. 1. Caroline, Mr.

Davies; 2. Grandeur Superbe, Mr. Beecroft; 3. Black Turban, Mr. Percy; 4. Lindleyana, Mr. Woolley; 5. Coccinea, Mr. Cankrien; 6. Black Turban, Mr. Woolley; 7. Orpheus, and 8. Black Turban, Mr. Beecroft. Buff, Yellow, and Orange: 1. and 2. Sulphurea grandiflora, Mr. Beecroft; 3. and 4. Cassandra, Mr. Cankrien; 5. and 6. Sulphurea grandiflora, Mr. Beecroft; 7. Sulphurea superba, Mr. Cankrien; 8. Sulphurea superba, Mr. Percy. Purple: 1. Summit of Perfection, and 2. Superb Dwarf, Mr. Woolley; 3. Summit of Perfection, and 4. Mutabilis, Mr. Davies; 5. and 6. Colville's Perfecta, Mr. Percy; 7. Amiable Rosetta, and 8. Mutabilis, Mr. Deighton. Lilac: 1. Royal Lilac, Mr. Bell; 2. Blush, Mr. Allinson; 3. Goliath, Mr. Cankrien; 4. Blanda, Mr. Woolley; 5. Blush, Mr. Cankrien; 6. Blush, Mr. W. V. Norman; 7. Taylor's Superb, Mr. Woolley; 8. Royal Lilac, Mr. Davies. China-asters. Selfs: 1. and 2. Mr. Norman; 3. Mr. Deighton; 4. and 5. Mr. Norman; 6. Mr. Deighton. Of other kinds: 1, 2, 3, and 4. Mr. D. Brown; 5. Mr. Norman; 6. Mr. D. Brown. Marigolds. French: 1. and 2. Mr. T. Simpson, gardener to Mr. Casson; 3. Mr. Smithson; 4. Mr. Norman; 5. Mr. T. Simpson; 6. Mr. Smithson. African: 1. Mr. Deighton; 2. Mr. Robson; 3. Mr. Smithson; 4. Mr. Robson; 5. and 6. Mr. Deighton. Best Bouquet, Mr. D. Brown. — *Fruit.* Apples. Dessert: 1. Mr. R. Robson; 2. Mr. G. Rudston; 3. Mr. R. Robson; 4. Mr. Brown, Barton; 5. Mr. John Jones; 6. Mr. Brown, Barton. Baking: 1. and 2. Mr. Smithson; 3. Mr. Brown, Barton; 4. Mr. Davies; 5. Mr. Brown, Barton; 6. Mr. Smithson. Pears, Mr. Robert Oglesby. — *Culinary Vegetables.* Celery, Mr. Wadsworth, gardener to G. Egginton, Esq. Broccoli, Mr. Henry Blundell. (*Hull Gazette*, Sept. 18.)

Sheffield Floral and Horticultural Society. — Sept. 27, 28. The chief contributors to this exhibition were as under:—His Grace the Duke of Portland sent a choice specimen of the *Lobelia* plant, and stove and green-house cut specimens of other curious plants. The Right Hon. Lord Wharcliffe sent a most beautiful collection of georginas, which, being attached to a wire-screen, appeared to great advantage. Amongst them we observed a choice seedling, called the Honourable Mrs. Talbot: and the collection altogether did great credit to Mr. Harrison, the gardener. Sir George Sitwell sent a superior specimen of the *Camellia japonica*, and a beautiful collection of the St. Catharine peaches, the largest we recollect having seen. Mr. Clark of Retford furnished some splendid georginas; and Messrs. Hudson and Son of the same place forwarded to the Committee a pole of hops of their own growth, in the North Clay, which was as fine a sample as was perhaps ever produced. Many gentlemen and practical gardeners in the town and neighbourhood were also contributors. The display of georginas was pronounced by competent judges to be equal to any collection ever exhibited in the country. There was a number of choice seedlings, particularly a bright scarlet one, tipped with white, which was really curious, and three others, named Lord Morpeth, Lady Milton, and Henry Brougham: another, which was called *Chrysanthiflora*, which had four small petals inside of each leaf; and several orange, purple, and other colours, which we cannot particularise. His Grace the Duke of Devonshire was also a contributor. (*Sheffield Courant*, Oct. 1.)

NORTHUMBERLAND.

Newcastle Botanical and Horticultural Society. — Sept. 3. The following prizes were adjudged:—

For the best-flavoured Pine-apple, the gold medal; for the best-flavoured Gooseberries, the silver medal; and for the best exotic plant in flower (*Celsoia cristata*), the silver medal, to Mr. Joseph Clarke, gardener to Mrs. Bewicke, Close House. For the best green-fleshed Melon, the silver medal, to Mr. James Scott, gardener to Humble Lamb, Esq., Ryton. For the best Scarlet Bizard Carnation (Scott's George the Fourth), the silver medal, and for the best Double Yellow Picotee (Rosalie de Rohan), the silver medal, to Mr. James Scott, gardener to Edward Charlton, Esq., Sandoe. For the best red-fleshed Melon, the silver medal, to Mr. Thomas Pearson, gardener to Isaac Cookson, jun., Esq., Park House. For the best six Peaches from an open wall, the silver medal, and for the best six Apricots from an open wall, the silver medal, to Mr. William Kelly, gardener to Armorer Donkin, Esq., Jesmond. For the best six Nectarines from an open wall, the silver medal, and for the best dish of Plums, the silver medal, to Mr. Thomas Watson, gardener to James Kirsopp, Esq., Spittal, Hexham. For the best Crimson Bizard Carnation (Sandham's Lady Kay), the silver medal, to Mr. Thomas Grey, gardener, Humshaugh. For the best Flake Carnation, the silver medal, to Mr. John Wilson, Newcastle. For the three best Double Picotees, the silver medal, to Mr. Matthew Bates, Kenton. For the best bouquet of Double Georginas, and for the best bouquet of Flowers, silver medals to Mr. Adam Hogg, at Mr. Falla's, Gateshead nursery. The quality of the various articles exhibited was very superior. (*Newcastle Courant*, Sept. 18.)

Sept. 7. A Branch Meeting of this Society was held at the Black Bull Inn, Hexham, when the prizes were awarded as under:—

For the best-flavoured Pine-apple, the gold medal, for the best six Peaches, the best six Nectarines, the best-flavoured dish of Gooseberries, and for the best Exotic Plant in flower, silver medals, to Mr. William Grew, gardener to Thomas James, Esq., Beaufront. For the best green-fleshed Melon, and for the best bouquet of Flowers, silver medals, to Mr. James Ireland, gardener to Edward Charlton, Esq., Sandoe. For the best scarlet-fleshed Melon, the best six Apricots, the best crimson Bizard Carnation (Scott's William the Fourth), and the three best Double Picotees, silver medals, to Mr. James Scott, gardener to E. Charlton, Esq., Sandoe. For the best dish of Plums, the silver medal, to Mr. Thomas Watson, gardener to R. L. Allgood, Esq., Nunwick Hall. For the best scarlet Bizard Carnation (Waterhouse's Rising Sun), the silver medal, to Mr. Thomas Grey, gardener, Humshaugh. For the best Double Flake Carnation (Cartwright's Lord Byron), the silver medal, to Mr. Robert Charlton, gardener, Wall. For the best Double Yellow Picotee (Rosalie de Rohan), and for the best bouquet of Double Georginas, silver medals, to Mr. Thomas Cook, gardener to T. W. Beaumont, Esq., Bywell Hall. An extremely large and fine bunch of the white Spanish Grapes was exhibited by Mr. Eben. Johnson, gardener to Sir E. Blackett, Bart., Matten, for which the Committee voted him a silver medal. Several beautiful and rare exotics decorated the tables, and among the rest an extremely curious accidental variety of *Amaryllis formosissima*, having ten petals, three in the upper part of the flower, and seven below: it was sent by the Rev. H. Wastell of Newbrough. (*Ibid.*, Sept. 18.)

The Old Adam's Lodge of Free Gardeners, Sunderland. — Sept. 6. Prizes were awarded as under:—

Carnations: 1. Beck's Friendship, Brother Harrop; 2. Butt's Lord Rodney, and 3. Sandham's Lady Kay, Brother Hull; 4. Sherwood's Corinthus, Brother Harrop; 5. Miss Lauder, Brother Davison. — *Picotees*: 1. King William the Fourth, Brother Davison; 2. Beauty of Baillie, Brother Harrop; 3. Hogg's Invincible, Brother Davison; 4. Barlow's Rose Leaf, Brother Hull; 5. Queen Adelaide, Brother Davison. (*Ibid.*, Sept. 18.)

Manchester Floral and Horticultural Society.—April 29. At the First Exhibition for the year 1881, prizes were awarded as under:—

Flower Show. 1 *Calceola venetisana*, James Hamshilton, Esq., 2 *Paeonia indica*, and 3 *Rubus odoratus*, Richard Potter, Esq., 4 *Cypripedium acaule*, William Garnett, Esq., 5 *Monarda mollis*, Mrs. Holman, 6 *Ulex europaeus*, Richard Potter, Esq., 7 *Chionodoxa*, Robert Andrew, Esq., 8 *Nerium odorum*, Richard Potter, Esq., 9 *Erythrina cruce-galli*, James Dunbar, Esq., 10 *Scilla*, 11 *Maritima*, and 12 *Vicia cracca*, William Dow, Esq., 13 *Chelidonium*, and 14 *Edemum*, Mrs. Holman, 15 *Veronica chamaedrys*, James Dunbar, Esq., 16 *Erythrina cruce-galli*, 17 *Philippa*, Esq., 18 *Aurinia*, William Dow, Esq., 19 *Monarda*, James Hamshilton, Esq., 20 *Nigella*, George Schuch, Esq., 21 *Hesperis*, 1 *Staphylea trifolia*, Mr. Edward Lewis, 2 *Orchis apiculata*, Mr. James Dunbar, 3 *Philippa longistylis*, William Dow, Esq., 4 *Trillium grandiflorum*, Mr. Edward Lewis, 5 *Wallnut caroliniana*, Mrs. Holman, 6 *Veronica*, Mr. James Dunbar, 7 *Chionodoxa*, 1 *Chionodoxa*, Mrs. Holman, 2 *Chionodoxa*, Mr. James Dunbar, 3 *Chionodoxa*, Mrs. Holman, 4 *Chionodoxa*, Mr. James Dunbar, 5 *Chionodoxa*, Mrs. Holman, 6 *Chionodoxa*, Mr. James Dunbar, 7 *Chionodoxa*, Mrs. Holman, 8 *Chionodoxa*, Mr. James Dunbar, 9 *Chionodoxa*, Mrs. Holman, 10 *Chionodoxa*, Mr. James Dunbar, 11 *Chionodoxa*, Mrs. Holman, 12 *Chionodoxa*, Mr. James Dunbar, 13 *Chionodoxa*, Mrs. Holman, 14 *Chionodoxa*, Mr. James Dunbar, 15 *Chionodoxa*, Mrs. Holman, 16 *Chionodoxa*, Mr. James Dunbar, 17 *Chionodoxa*, Mrs. Holman, 18 *Chionodoxa*, Mr. James Dunbar, 19 *Chionodoxa*, Mrs. Holman, 20 *Chionodoxa*, Mr. James Dunbar, 21 *Chionodoxa*, Mrs. Holman, 22 *Chionodoxa*, Mr. James Dunbar, 23 *Chionodoxa*, Mrs. Holman, 24 *Chionodoxa*, Mr. James Dunbar, 25 *Chionodoxa*, Mrs. Holman, 26 *Chionodoxa*, Mr. James Dunbar, 27 *Chionodoxa*, Mrs. Holman, 28 *Chionodoxa*, Mr. James Dunbar, 29 *Chionodoxa*, Mrs. Holman, 30 *Chionodoxa*, Mr. James Dunbar, 31 *Chionodoxa*, Mrs. Holman, 32 *Chionodoxa*, Mr. James Dunbar, 33 *Chionodoxa*, Mrs. Holman, 34 *Chionodoxa*, Mr. James Dunbar, 35 *Chionodoxa*, Mrs. Holman, 36 *Chionodoxa*, Mr. James Dunbar, 37 *Chionodoxa*, Mrs. Holman, 38 *Chionodoxa*, Mr. James Dunbar, 39 *Chionodoxa*, Mrs. Holman, 40 *Chionodoxa*, Mr. James Dunbar, 41 *Chionodoxa*, Mrs. Holman, 42 *Chionodoxa*, Mr. James Dunbar, 43 *Chionodoxa*, Mrs. Holman, 44 *Chionodoxa*, Mr. James Dunbar, 45 *Chionodoxa*, Mrs. Holman, 46 *Chionodoxa*, Mr. James Dunbar, 47 *Chionodoxa*, Mrs. Holman, 48 *Chionodoxa*, Mr. James Dunbar, 49 *Chionodoxa*, Mrs. Holman, 50 *Chionodoxa*, Mr. James Dunbar, 51 *Chionodoxa*, Mrs. Holman, 52 *Chionodoxa*, Mr. James Dunbar, 53 *Chionodoxa*, Mrs. Holman, 54 *Chionodoxa*, Mr. James Dunbar, 55 *Chionodoxa*, Mrs. Holman, 56 *Chionodoxa*, Mr. James Dunbar, 57 *Chionodoxa*, Mrs. Holman, 58 *Chionodoxa*, Mr. James Dunbar, 59 *Chionodoxa*, Mrs. Holman, 60 *Chionodoxa*, Mr. James Dunbar, 61 *Chionodoxa*, Mrs. Holman, 62 *Chionodoxa*, Mr. James Dunbar, 63 *Chionodoxa*, Mrs. Holman, 64 *Chionodoxa*, Mr. James Dunbar, 65 *Chionodoxa*, Mrs. Holman, 66 *Chionodoxa*, Mr. James Dunbar, 67 *Chionodoxa*, Mrs. Holman, 68 *Chionodoxa*, Mr. James Dunbar, 69 *Chionodoxa*, Mrs. Holman, 70 *Chionodoxa*, Mr. James Dunbar, 71 *Chionodoxa*, Mrs. Holman, 72 *Chionodoxa*, Mr. James Dunbar, 73 *Chionodoxa*, Mrs. Holman, 74 *Chionodoxa*, Mr. James Dunbar, 75 *Chionodoxa*, Mrs. Holman, 76 *Chionodoxa*, Mr. James Dunbar, 77 *Chionodoxa*, Mrs. Holman, 78 *Chionodoxa*, Mr. James Dunbar, 79 *Chionodoxa*, Mrs. Holman, 80 *Chionodoxa*, Mr. James Dunbar, 81 *Chionodoxa*, Mrs. Holman, 82 *Chionodoxa*, Mr. James Dunbar, 83 *Chionodoxa*, Mrs. Holman, 84 *Chionodoxa*, Mr. James Dunbar, 85 *Chionodoxa*, Mrs. Holman, 86 *Chionodoxa*, Mr. James Dunbar, 87 *Chionodoxa*, Mrs. Holman, 88 *Chionodoxa*, Mr. James Dunbar, 89 *Chionodoxa*, Mrs. Holman, 90 *Chionodoxa*, Mr. James Dunbar, 91 *Chionodoxa*, Mrs. Holman, 92 *Chionodoxa*, Mr. James Dunbar, 93 *Chionodoxa*, Mrs. Holman, 94 *Chionodoxa*, Mr. James Dunbar, 95 *Chionodoxa*, Mrs. Holman, 96 *Chionodoxa*, Mr. James Dunbar, 97 *Chionodoxa*, Mrs. Holman, 98 *Chionodoxa*, Mr. James Dunbar, 99 *Chionodoxa*, Mrs. Holman, 100 *Chionodoxa*, Mr. James Dunbar, 101 *Chionodoxa*, Mrs. Holman, 102 *Chionodoxa*, Mr. James Dunbar, 103 *Chionodoxa*, Mrs. Holman, 104 *Chionodoxa*, Mr. James Dunbar, 105 *Chionodoxa*, Mrs. Holman, 106 *Chionodoxa*, Mr. James Dunbar, 107 *Chionodoxa*, Mrs. Holman, 108 *Chionodoxa*, Mr. James Dunbar, 109 *Chionodoxa*, Mrs. Holman, 110 *Chionodoxa*, Mr. James Dunbar, 111 *Chionodoxa*, Mrs. Holman, 112 *Chionodoxa*, Mr. James Dunbar, 113 *Chionodoxa*, Mrs. Holman, 114 *Chionodoxa*, Mr. James Dunbar, 115 *Chionodoxa*, Mrs. Holman, 116 *Chionodoxa*, Mr. James Dunbar, 117 *Chionodoxa*, Mrs. Holman, 118 *Chionodoxa*, Mr. James Dunbar, 119 *Chionodoxa*, Mrs. Holman, 120 *Chionodoxa*, Mr. James Dunbar, 121 *Chionodoxa*, Mrs. Holman, 122 *Chionodoxa*, Mr. James Dunbar, 123 *Chionodoxa*, Mrs. Holman, 124 *Chionodoxa*, Mr. James Dunbar, 125 *Chionodoxa*, Mrs. Holman, 126 *Chionodoxa*, Mr. James Dunbar, 127 *Chionodoxa*, Mrs. Holman, 128 *Chionodoxa*, Mr. James Dunbar, 129 *Chionodoxa*, Mrs. Holman, 130 *Chionodoxa*, Mr. James Dunbar, 131 *Chionodoxa*, Mrs. Holman, 132 *Chionodoxa*, Mr. James Dunbar, 133 *Chionodoxa*, Mrs. Holman, 134 *Chionodoxa*, Mr. James Dunbar, 135 *Chionodoxa*, Mrs. Holman, 136 *Chionodoxa*, Mr. James Dunbar, 137 *Chionodoxa*, Mrs. Holman, 138 *Chionodoxa*, Mr. James Dunbar, 139 *Chionodoxa*, Mrs. Holman, 140 *Chionodoxa*, Mr. James Dunbar, 141 *Chionodoxa*, Mrs. Holman, 142 *Chionodoxa*, Mr. James Dunbar, 143 *Chionodoxa*, Mrs. Holman, 144 *Chionodoxa*, Mr. James Dunbar, 145 *Chionodoxa*, Mrs. Holman, 146 *Chionodoxa*, Mr. James Dunbar, 147 *Chionodoxa*, Mrs. Holman, 148 *Chionodoxa*, Mr. James Dunbar, 149 *Chionodoxa*, Mrs. Holman, 150 *Chionodoxa*, Mr. James Dunbar, 151 *Chionodoxa*, Mrs. Holman, 152 *Chionodoxa*, Mr. James Dunbar, 153 *Chionodoxa*, Mrs. Holman, 154 *Chionodoxa*, Mr. James Dunbar, 155 *Chionodoxa*, Mrs. Holman, 156 *Chionodoxa*, Mr. James Dunbar, 157 *Chionodoxa*, Mrs. Holman, 158 *Chionodoxa*, Mr. James Dunbar, 159 *Chionodoxa*, Mrs. Holman, 160 *Chionodoxa*, Mr. James Dunbar, 161 *Chionodoxa*, Mrs. Holman, 162 *Chionodoxa*, Mr. James Dunbar, 163 *Chionodoxa*, Mrs. Holman, 164 *Chionodoxa*, Mr. James Dunbar, 165 *Chionodoxa*, Mrs. Holman, 166 *Chionodoxa*, Mr. James Dunbar, 167 *Chionodoxa*, Mrs. Holman, 168 *Chionodoxa*, Mr. James Dunbar, 169 *Chionodoxa*, Mrs. Holman, 170 *Chionodoxa*, Mr. James Dunbar, 171 *Chionodoxa*, Mrs. Holman, 172 *Chionodoxa*, Mr. James Dunbar, 173 *Chionodoxa*, Mrs. Holman, 174 *Chionodoxa*, Mr. James Dunbar, 175 *Chionodoxa*, Mrs. Holman, 176 *Chionodoxa*, Mr. James Dunbar, 177 *Chionodoxa*, Mrs. Holman, 178 *Chionodoxa*, Mr. James Dunbar, 179 *Chionodoxa*, Mrs. Holman, 180 *Chionodoxa*, Mr. James Dunbar, 181 *Chionodoxa*, Mrs. Holman, 182 *Chionodoxa*, Mr. James Dunbar, 183 *Chionodoxa*, Mrs. Holman, 184 *Chionodoxa*, Mr. James Dunbar, 185 *Chionodoxa*, Mrs. Holman, 186 *Chionodoxa*, Mr. James Dunbar, 187 *Chionodoxa*, Mrs. Holman, 188 *Chionodoxa*, Mr. James Dunbar, 189 *Chionodoxa*, Mrs. Holman, 190 *Chionodoxa*, Mr. James Dunbar, 191

May 20. At the Second Exhibition for the year 1850, prizes were awarded

Phloxes. Shrub 1 *Shrubby* Hefner, and 2 *Bilbo* tetraevia, Mrs. Hefner, 3 *Alphie* notata, Charles Wood, Esq.; 4 *Moss* rosea, James Brewster, Esq.; 5 *Calico* aurata, James Hammetton, Esq.; 6 *Unkown*, Mrs. Hefner, 7 *Apollon* americana, 8 *Cypripedium* ovatum, and 9 *Burke* ovata, William Carver, Esq.; 10 *Erythraea* *Crataegus*, George Schuler, Esq.; 11 *Cardus* *radicans*, Mrs. Hefner, 12 *Pennsylvanica* *crassa*, Richard Potter, Esq.; 13 *Geranium*, William Bow, Esq.; 14 *Urtica*, and 3 *Martensia*, Mrs. Hefner; 4 *Tribe*, James Hammetton, Esq.; 5 *Vicia* *canadensis*, William Bow, Esq.; 6 *Vestrum*, and 7 *Marshall*, Mrs. Hefner, 8 *Gelata*, Richard Potter, Esq.; 9 *Vestrum* *alta*, William Bow, Esq.; 10 *Calypso* *capitata*, Mrs. Hefner, 11 *Vestrum* *crassa*, Roger Holland, Esq.; 12 *Vicia* *crassa*, Nath Phillips, Esq.; 13 *Geranium* *calycatum*, Mr. C. Moore; 14 *C. pubescens*, Mr. J. Faulstich, 15 *Geranium* *canadensis*, William Bow, Esq.; 4 *Geranium* *alpina*, Mr. John Hefner; 5 *Rosa* *canadensis*, E. Hefner, Esq.; 6 *Composita*, unknown, Mr. Edward Lewis, 7 *Rosa* *canadensis*, Mr. James Faulstich, 8 *Geranium* *crassa*, William Bow, Esq.; 9 *Geranium* *crassa*, 10 *Geranium* *crassa*, 11 *Geranium* *crassa*, and 12 *Geranium* *crassa*, Mrs. Hefner, 13 *Geranium* *crassa*, George Schuler, Esq.; 14 *Geranium* *crassa*, and

[illegible]

Downie; 7. Seedling, Mr. James Faulkner. Lilac, Rose, or Blush: 1. (premier) Goliath, Earl of Wilton; 2. Theodore, Mr. Wm. Lodge; 3. Blush Lilac, Mr. William Chadwick; 4. Excellent, and 5. Lady Lilcon, Messrs. Cunningham and Son; 6. Lilac, Wm. Bow, Esq.; 7. Quilled Lilac, Mr. Wm. Lodge. *Anemone*: 1. (premier) Unknown, Richard Potter, Esq.; 2. Feathered Crimson, Mr. John Jones; 3. Neat Purple, Messrs. Cunningham and Son; 4. Unknown, and 5. Painted Lady, Rev. M. Gilpin; 6. Painted Lady, Mr. John Jones; 7. Unknown, Rev. M. Gilpin. Single: 1. (premier) Seedling, Wm. Garnett, Esq.; 2. Middletonia, Mr. J. Hulme; 3. White, Richard Potter, Esq.; 4. and 5. Seedling, Francis Bayley, Esq.; 6. Seedling, Mr. James Platford; 7. Unknown, Henry Pope, Esq.; 8. Seedling, C. J. S. Walker, Esq.; 9. Seedling, Rev. J. Clowes; 10. Seedling, G. Hole, Esq.; 11. Seedling, James Brierley, Esq.; 12. Reine des Pourpres, Mr. Jas. Faulkner. Baskets of Flowers: 1. Earl of Wilton; 2. Richard Potter, Esq.; 3. and 4. William Bow, Esq. — *Fruit*. Pine: 1. White Providence, William Garnett, Esq.; 2. Enville, Thomas Mottram, Esq.; 3. Montserrat, Edward Lloyd, Esq.; 4. Blood, John Entwistle, Esq. Grapes: 1. Muscat of Alexandria, Charles Wood, Esq.; 2. Lombardy, Richard Potter, Esq.; 3. Grizzly Frontignac, George Hole, Esq.; 4. Frontignac, Earl of Wilton. In pots: 1. Grizzly Frontignac, Richard Potter, Esq.; 2. Grizzly Frontignac, Edward Lloyd, Esq. Melons: 1. Gregson's, Josh. Lane, Esq.; 2. Gregson's, Charles Wood, Esq.; 3. James Darbishire, Esq. Peaches: 1. R. J. J. Morreys, Esq.; 2. Edward Lloyd, Esq. Nectarines: 1. Brugnion, Earl of Wilton; 2. Elruge, Mrs. Hobson. Apricots: 1. Mr. C. Downie; 2. Orange, Rev. J. Clowes. Plums: 1. Green Gage, Mr. C. Downie; 2. Précoce de Tours, C. J. S. Walker, Esq. Pears: 1. Citron des Carmes, Mr. John Moore; 2. Jargonelle, Mr. C. Downie. Apples: 1. Early Margaret, and 2. Summer Pippin, Wm. Leighton, Esq. Gooseberries, Red: Roaring Lion (heaviest), 24 dwts. 14 grs., Mrs. Smith. Plates: 1. Roaring Lion, Mr. Thomas Slater; 2. Seedling, Mrs. Smith; 3. Seedling, Mr. Thomas Slater; 4. Lancashire Lad, Mr. P. Daine. Green: Angler (heaviest), 20 dwts. 7 grs., R. F. Buckley, Esq. Plates: 1. Favorite, Mr. Thomas Slater; 2. Angler, Mr. Joseph Furnifal; 3. Ocean, Mr. P. Daine; 4. Toper, R. F. Buckley, Esq. Yellow: Gunner (heaviest), 24 dwts. 10 grs., Jas. Darbishire, Esq. Plates: 1. Gunner, Mr. Joseph Furnifal; 2. Viper, Mr. Thomas Slater; 3. Bunker's Hill, and 4. Unknown, Mr. Henry Bent. White: White Eagle (heaviest), 23 dwts. 8 grs., Mrs. Smith. Plates: 1. White Eagle, and 2. Nonpareil, Mrs. Smith; 3. Lady Delamere, Mr. P. Daine; 4. Bonny Lass, Mr. Joseph Furnifal. Currants, Black, Earl of Wilton; White, Thomas Knight, Esq.; Red, Mr. Thomas Marvin. Raspberries, Red and White, Earl of Wilton. — *Culinary Vegetables*. Celery: 1. Red, James Darbishire, Esq.; 2. Red, and 3. White, Lionel Lloyd, Esq.; 4. Red, Thomas Mottram, Esq. Onions: 1. L. Lloyd, Esq.; 2. Mr. T. Barber. *Extra-Prizes*. Plants. Stove: *Besleria cristata*, William Garnett, Esq.; *Streitzia ovata*, Earl of Wilton; *Erythrina Crista galli*, George Hole, Esq. Green-house: *Statice sinuata*, Geo. Hole, Esq.; *Nerium splendens*, Richard Potter, Esq.; *Trachelium cæruleum*, Mrs. Hobson. Herbaceous: *Yucca gloriosa*, Mr. James Faulkner; *Campanula pyramidalis*, James Darbishire, Esq.; *Potentilla Russelliana*, Mrs. Hobson; *Phlox intermedia*, Mr. John Hulme. Ericas: 1. Tricolor, and 2. *Jasminiflora minor*, Wm. Bow, Esq.; 3. *Thunbergia*, J. Bradshaw, Esq. — *Flowers*. Picotees: Pot of Cleopatra, with 36 blooms, Mr. James Booth. Striped: 1. (premier) Queen Adelaide, Francis Bayley, Esq.; 2. Hannibal, Thos. Knight, Esq.; 3. Mutabilis, Rev. M. Gilpin. Best Semidouble: 1. Seedling, Francis Bayley, Esq.; 2. Purple, Messrs. Cunningham and Son; 3. Lilac, C. J. S. Walker, Esq. — *Fruit*. Providence Pine, Thomas Mottram, Esq.; Pine, John Entwistle, Esq. Grapes: Lombardy, Richard Potter, Esq.; Black Hamburg, William Tetlow, Esq., and Messrs. Cunningham and Son; Red, Charles Wood, Esq.; Purple Constantia, Earl of Wilton. Peaches, R. J. J. Morreys, Esq. Nectarines, Edward Lloyd, Esq. Plums, Rich. Smith, Esq. Apples, growth of 1829, G. L. Ridehalgh, Esq., and Mr. P. Daine. Cherries, Morello, John Hill, Esq. Mulberries, Mr. C. Downie. Strawberries, Alpine, John Hill, Esq. Shaddocks, W. A. West, Esq. — *Culinary Vegetables*. Onions, Wellington, Wm. Garnett, Esq. Peas, C. Wood, Esq.; Mulatto, T. Hadfield, Esq. Artichokes, G. Scholes, Esq. Lettuce, Malta, Lionel Lloyd, Esq.; Magnum Bonum, James Booth, Esq.

The Manchester Botanic Garden, which has been for two or three years in progress, was opened on the 27th of October, and upwards of 500 persons walked round it, and appeared highly satisfied. The garden is far from being completed, but enough is done to show what it will be. The green-house and hot-house, constructed by Messrs. John Jones and Co. of Birmingham, gave great satisfaction, as did the two entrance lodges [though we have heard them spoken of as rather in bad taste]. The Council, having determined to celebrate the opening of the garden by an exhibition of fruits and vegetables, offered three prizes, consisting of the large silver medal of the London Horticultural Society, placed at their disposal for that purpose, and two silver cups given by the Council. Owing to the late period of the year, the candidates for these prizes were not numerous; but some very beautiful dishes of fruit were exhibited. The prizes were gained by the following gentlemen: — The first prize (the silver medal), by Chas. Walker, Esq., who exhibited twelve dishes of pears, four of apples, one of melons, one of plums, and three of vegetables. The second prize, by R. W. Barton, Esq., who exhibited four dishes of grapes, one of peaches, seven of pears, four of apples, and six of vegetables. The third prize, by Richard Potter, Esq., of Smedley, who exhibited one pine (a most splendid fruit), two dishes of grapes, and four of vegetables. There was also some excellent fruit exhibited by S. J. Trafford, Esq., and John Moore, Esq. The apples sent by the former gentleman were particularly fine. (*Country Times*, Nov. 1. 1830)

Bolton Floral and Horticultural Society. — Aug. 18. The show of carnations, stove, green-house, and herbaceous plants, fruits, &c., exceeded all previous exhibitions. Mr. James Mosley, gardener to R. Holland, Esq., and Mr. Wm. Whittle, gardener to William Hulton, Esq., exhibited some excellent specimens, which attracted much notice. Six silver cups have been won this year by R. Holland, Esq., and three by E. Silvester, Esq., from Chorley. The following is a list of the principal prizes, with their winners: —

Plants. Stove: *Gloriosa viridescens* (the silver cup), E. Silvester, Esq., from Chorley; *Datura arborea*, James Cross, Esq. Green-house: *Calceolaria corymbosa* (silver cup), R. Holland, Esq.; *Verbena Mellandres*, Wm. Hulton, Esq.; *Erica*, E. Silvester, Esq.; *Geranium*, R. Holland, Esq. Herbaceous, Mr. James Faulkner. Hardy, Roger Holland, Esq. Extra-prize, Arabian Coffee in bearing, J. Ridgway, Esq. Orange tree in fruit, James Cross, Esq. *Vinca alba*, Roger Holland, Esq. Basket of Plants, E. Ashworth, Esq. — *Flowers*. Carnations, Pan of (silver cup), consisting of Perfection, Alfred, Major Cartwright, Madam Mara, Sir George Crew, and Cleopatra, Roger Holland, Esq.; premier prize, Mr. Thomas Ormrod. Bizards, Scarlet, Mr. James Rushton and six others; Pink, Wm. Leighton, Esq., and six others. Flake, Scarlet, Roger Holland, Esq., and six others; Pink, John Wakefield, Esq., from Manchester, and six others; Purple, Mr. J. Hard-

Ellis, Fleet. Celery, Mr. Roberts, Dock-yard. Onions, Mr. Thomas Smale, Sydenham. Basket of Vegetables, Mr. Manning, gardener to Admiral Sir M. Dixon, K.C.B.

Cottagers' Prizes. Georginas: 1. Mr. Wood, Plymouth; 2. Mr. Jarman, Plymouth. China Asters: 1. Mr. Jarman; 2. Mr. Potam, Devonport. Stocks: 1. Mr. Jarman; 2. Mr. F. Wood. Hardy Annuals, Mr. Jarman. Peas: 1. and 2. Mr. Wood. Basket of Vegetables: 1. Mr. Wood; 2. Mr. Jarman.

Cottagers' Extra-Prizes. Basket of Vegetables: 1. and 2. Mr. Stapleton, Compton.

Judges. Plants and Flowers: E. Luscombe, Esq., E. W. Churchill, Esq., and Mr. Burge. Fruit: R. Bromley, Esq., B. Parham, Esq., J. H. Luscombe, Esq., N. Downe, Esq., Mr. Dyer, gardener to H. Williams, Esq., Carnanton, and Mr. Wood, gardener to Sir William Call, Bart. Culinary Vegetables: Mr. Crawford, Mr. Cummings, and Mr. ———. *Cottagers' Prizes:* Mr. John Brown, Mr. Kerr, and Mr. Kean.

Amongst the vegetables were an immense cabbage, weighing 26 lbs., from Erme Bridge, and two large turnips, averaging 2 ft. 7 in. each in circumference, from the garden of F. Gilbert, Esq., Bolmin. Amongst the display of fruit were, the *Psidium pyrifera*, grown by Mr. Burge, gardener to the Rev. R. Lane, Coffleet, who furnished a large root of the *Zingiber officinale*; and a dish, containing what many of the company mistook for painted eggs, but which, we are informed, were the fruit of the *Cucumis osmocarpus*, or sweet-scented melon, introduced by the secretary about five years since, from Carthagenia de Colombia, where this fruit is known by the name of Meloncito de Olor: these were the growth of Mr. Saunders of Kitley, and were deservedly admired, as well for their beauty and diminutive size as for their exquisite odour. (*Plymouth Journal*, September 16.)

WIGTONSHIRE

Wigtonshire Horticultural Society. — *Stranraer*, September 9. 1830. The exhibition of fruits and flowers was much better than could have been expected, considering the unpropitious nature of the weather during summer. In the course of the year prizes were adjudged for the following articles: —

Strawberries, Mr. Stewart, gardener at Galloway House. Melon, fit for the table on June 1., to Mr. Porteous, gardener at Lochnew. Green Peas, Mr. Ferguson, gardener at Balkail. Cauliflower, Mr. Porteous, gardener at Lochnew. Early Potatoes, Mr. Stewart, gardener at Galloway House. Apples, of crop 1829 (exhibited in June), Mr. Porteous, gardener at Lochnew. Melons (exhibited in September), Mr. Cumming, gardener at Dunraget. Grapes, Mr. Stewart, gardener at Galloway House. Blanched Celery, Mr. Ferguson, gardener at Balkail. Plums, Mr. Ferguson, gardener at Balkail. Varieties of Apples, Mr. Porteous, gardener at Lochnew. Nectarines, Mr. Douglas, gardener at Glasserton. Cherries (exhibited in September), Mr. Ingram, gardener at Glenoch. Double Scotch Rose, Mr. Ferguson, gardener at Balkail. Ranunculus, Mr. Stewart, gardener at Galloway House. Pink, Rev. David Wilson, Stranraer. Rose, Mr. James Wilson, nurseryman, Stranraer. Stock, Rev. David Wilson, Stranraer. Double Georgina, Mr. James Wilson, nurseryman, Stranraer. (*Dumfries and Galloway Courier*, September 28.)

RENFREWSHIRE

West Renfrewshire Horticultural Society. — *September 21.* At the General Annual Meeting the prizes were awarded as under: —

Altringham Carrots: 1. Mr. Archibald Brown, gardener, Park; 2. Mr. Duncan Fletcher; 3. Mr. John Niven, gardener. Celery: 1. Mr. Adam Melross, gardener to Sir Michael Shaw Stewart, Ardgowan; 2. Mr. Archibald Brown; 3. Mr. John Sinclair, gardener, Wood. Red Cabbages: 1. Mr. John Hill, gardener, Finlayston; 2. Mr. James Calder, gardener, Port-Glasgow; 3. Mr. Malcolm Service, gardener to Mr. Fairie. Carnations: 1. Mr. Malcolm Service; 2. Mr. Henry Knox, gardener to Jacob Dixon, Esq., Dumbarton; 3. Mr. John Borthwick, seedsman.

The committee appointed as judges arranged the show articles, according to their respective merit, as follows: —

Onions, sown this year: 1. Mr. John M'Nab, gardener to Lieutenant-General Darroch, Gourrock; 2. Mr. Charles Williamson, gardener, Port Glasgow. Apples: 1. Mr. Adam Melross; 2. Mr. Archibald Brown. Pears: 1. Mr. John M'Nab; 2. Mr. Adam Melross. Double Georginas: 1. Mr. Adam Melross; 2. Mr. Henry Knox. Single Georginas: 1. Mr. Thomas Grey, Plantation; 2. Mr. Adam Melross. Plums: 1. Green Gage, Orleans, and Magnum bonum, Mr. Archibald Brown; 2. Mr. Adam Melross. Red Beet: 1. Mr. Edward Brodley, gardener to Andrew Rankin, Esq., Ashburn; 2. Mr. James Campbell, Gourrock. China Asters: 1. Mr. John M'Nab; 2. Mr. Henry Knox.

Besides those enumerated there were many other articles contributed; some very fine grapes, by Mr. Shields, gardener to Lord Blantyre, and by Mr. Adam Melross. The former also exhibited a quantity of excellent peaches and nectarines, and the latter an exquisitely fine pine-apple, of large dimension, and fully ripe. A large quantity of beautiful double hollyhocks, by Messrs. John Borthwick, James Campbell, and Adam Melross. Mr. Malcolm Service exhibited a very fine pompion, of great magnitude, measuring upwards of thirty inches in circumference, as also a number of very large gourds. A beautiful vegetable marrow was exhibited by Mr. James Kirkpatrick, gardener to Mrs. Crooks, Leven; a quantity of very large new Scoresbrick and Maltese turnips, by Mr. John Borthwick and Mr. Charles Williamson: the latter also exhibited some excellent dwarf greens. Peter Montgomerie, Esq. Port Glasgow, contributed a number of very fine peaches reared on the open wall, as also a quantity of the beautiful Mirabelle plums. A lot of very fine gooseberries, taken from off the bush on the morning of the exhibition, was exhibited by Mr. Thomas Grey, which were considered a curiosity at this season. Some beautiful pinks and heaths, by Mr. Henry Knox and Mr. Malcolm Service. Several late cabbages, of incredible size, by Mr. John Sinclair and Mr. Richard Adams, Pilot. (*Greenock Advertiser*, Sept. 28.)

LANARKSHIRE

Glasgow Horticultural Society. — *September 21, 22.* Prizes were awarded as under: —

Plants. Stove or Green-house: 1. Mr. Daniel Cunningham, gardener to Sir Archibald Campbell, Garscube; no second prize adjudged. — *Flowers.* Hardy: 1. Mr. George Duncan, gardener to Miss Oswald, Scotstown; 2. Mr. James Rutherford, gardener to H. Fulton, Esq., of Park. Double Georginas: 1. Mr. William Gowans, gardener to Mrs. Stirling, Cadder; 2. Mr. John

Wilkie, gardener to John Weddrip, Esq., Dalmenach. Single Geomphs: 1. Mr. William Kerr, gardener to Mrs. Dixon, Leven Grove; 2. Mr. James Rutherford, gardener to Henry Fulton, Esq., of Park, Chisum Room. 1. Mr. Daniel Cunningham, gardener to Mr. Archibald Campbell, Garroch; 2. Mr. George Dunlop, gardener to Miss Oswald, Broxburn. — Fruit. Pine-apples: 1. Mr. Walter Henderson, gardener to Walter Campbell, Esq., Woodhall; 2. Mr. Andrew Turnbull, gardener to Lord Douglas, Bothwell Castle. Grapes: 1. Mr. George Shields, gardener to Lord Bantyre, Erskine House; 2. Mr. John Brown, gardener to William M'Lenn, Esq., Flintham. Pines: 1. Mr. James Tait, gardener to James Darnley, Esq., Merrydale; 2. Mr. James Sinclair, gardener to Kirkman Finlay, Esq., Castle Toward. Pears: 1. Mr. John Wilkie, gardener to John Weddrip, Esq., Dalmenach; 2. Mr. James Walker, gardener to Archibald Douglas, Esq., Broxburn. Apples: 1. Mr. Robert Brownlie, gardener to General Stewart, Corbie; 2. Mr. John Smith, gardener to the Marquess of Bute, Mountstewart. Peaches: 1. Mr. James Morison, gardener to Alexander Hamilton, Esq., Southwell; 2. Mr. George Weatherly, gardener to ——— Hughes, Esq., Clyde Villa. Nectarines: 1. Mr. William Kerr, gardener to Mrs. Dixon, Leven Grove; 2. Mr. Andrew Turnbull, gardener to Lord Douglas, Bothwell Castle. — Culinary Vegetables. Tomatoes, or Love Apples: 1. Mr. Daniel Cunningham, gardener to Mr. Archibald Campbell, Garroch; 2. Mr. Peter Donaldson, gardener to Michael Howard, Esq., Linthouse. Twelve varieties of Vegetables: 1. Mr. James Tait, gardener to James Darnley, Esq., Merrydale; 2. Mr. James Sinclair, gardener to Kirkman Finlay, Esq., Castle Toward; 3. Mr. Charles Ross, gardener to George Buchanan, Esq., Woodland. — Cucumber-cucumers: 1. Mr. George Shields, gardener to Lord Bantyre, Erskine House, for an account of a Pine-apple on an economical construction; 2. Mr. James Ross, gardener to James Baird, Esq., Annfield, for an account of his mode of growing Cusps. (Glasgow Free Press, September 24.)

STIRLINGSHIRE

Stirling Horticultural Society.—September 7. At the Annual General Meeting the prizes were awarded as under:—

Flowers. Carnations: 1. Mr. Ninian Niven, gardener to James Stirling, Esq., of Keir; 2. Mr. John Brown, Tullyhall. 3. Mr. George Lightbody, Falkirk. Hollyhocks: 1. Mr. Daniel McGregor, gardener to the Right Hon. Lord Blyth, Leven; 2. Mr. William Somerville, 1. Mr. George Milne, gardener to John Brown, Esq., of Kilsyth; 2. Mr. Ninian Niven; 3. Mr. James McFarlane, Stirling. Hardy Annuals: 1. Mr. John Brown, Tullyhall; 2. Mr. Ninian Niven; 3. Mr. John McInnes, Works. 1. Mr. William Kerr; 2. Mr. James McFarlane; 3. Mr. John McInnes. — Fruit. Melons best saved: 1. Mr. Hugh Macdonald, gardener to James Calder, Esq., of Craigforth; 2. Mr. Ninian Niven; 3. Mr. George Lightbody. Best green-Bush: 1. Mr. Daniel McGregor; 2. Mr. George Milne; 3. Mr. John Brown. Grapes: 1. Mr. John Brown, gardener to Count Flahault, Tullyhall Castle; 2. Mr. John McInnes, gardener to Robert Brown, Esq., of Kilmartine. Pines open walls: 1. Mr. John Mitchell, gardener to William Murray, Esq., of Polmont; 2. Mr. John Brown; 3. Mr. John Brown. Pines not open: 1. Mr. David Trotter, gardener to James Johnston, Esq., of Ayr; 2. Mr. David Trotter, gardener to Henry Fletcher Campbell, Esq., of Raighan. Peaches from open walls: Mr. David Trotter, no competition. From bud-bone: 1. Mr. David Trotter; 2. Mr. Ninian Niven; 3. Mr. John Brown. Apples from open walls: 1. Mr. William Somerville, gardener to John Stirling, Esq., of Kippendavie; 2. Mr. John McInnes; 3. Mr. John Brown. Pears from open walls: 1. Mr. Ninian Niven; 2. Mr. William Kerr, gardener to Mrs. Edmond of Camels Park; 3. Mr. John McInnes. Any other sort: 1. Mr. William Kerr; 2. Mr. James Mitchell, gardener to Mrs. Hume of Auchincroft; 3. Mr. William Somerville. Apples: 1. Mr. John Mitchell; 2. Mr. Hugh Macdonald; 3. Mr. William Somerville. Pears: 1. Mr. George Milne; 2. Mr. William Kerr, gardener to John Murray, Esq., of Weir, Leven; 3. Mr. William Somerville. Coxcombines Red, Green, and Yellow, Mr. William Kerr (no competition). — Culinary Vegetables. Best Beet: 1. Mr. William Kerr, Weir, Leven; 2. Mr. William Somerville; 3. Mr. George Milne. Onions: 1. Mr. William Kerr; 2. Mr. Hugh Macdonald; 3. Mr. James Macfarlane.

Mr. William Wythe, gardener at Cardross, produced a basket of superior artichokes, intended for competition, but they were precluded, in consequence of arriving after the specified hour. (Glasgow Advertiser, September 10.)

FIFESHIRE

Cupar Horticultural Society.—Nov. 10. The prizes were awarded as follows:—

To Mr. George Watson, gardener to Mr. James Home Begg of Tarril, for the best six kinds of Apples, four of each sort; Mr. James Anderson, gardener to Col. Dun of Springfield, 2d best. Mr. George Watson, for the best four kinds of Pears, four of each sort, Mr. James Beuchard, gardener to George Campbell, Esq., of Edinburgh, 3d best; Mr. James Anderson, 2d best. Mr. George Watson, for the best two kinds of Apples not generally known in Scotland, four of each sort, Mr. James Anderson, 2d best; Mr. John Young, gardener to James Lumsden, Esq., of Lathallan, 3d best. Mr. George Watson, for the best specimen of the Hocking Apple. Mr. James Anderson, for the best three Hunter Pippins. The Hunter Pippin, a fine apple of the kind, is produced from grafts of a seedling apple raised by Dr. Hunter of St. Andrews, an honorary member, and sent by him to the Society, which were divided among the members. Mr. Thomas Craig, gardener to the Earl of Leven and Melville, for the best six stocks of red-stalked Calves; Mr. James Anderson, 2d best; Mr. John Young, 3d best. Mr. James Beuchard, for the best three red heart-roots; Mr. John Young, 2d best; Mr. James Anderson, 3d best. Mr. John Young, for the best six Ayrshire Carrots; Mr. George Watson, 2d best; Mr. John Young, for the best twelve red Onions; Mr. George Watson, 2d best; Mr. John Young, for the best three green curled Endive; Mr. John Young, for the best six Salads; Mr. John Young, for the best six Turneps; Mr. James Anderson, for the best three Savoys; Mr. James Beuchard, for the best two stocks of red Cabbages; Mr. James Anderson, 2d best. (Fife Herald, Nov. 11. 1833.)

PERTSHIRE

Dundee Horticultural Society.—June 10. The successful competitors were as under:—

Mr. James Kidd, gardener, House Priory, for the best White Oroued Polyanthus, Second Seedling Polyanthus, and best variety of Green-house Flowers; Mr. James Smith, gardener,

Ellangowan, for the best variety of Pelargoniums, second White Grounds, best Seedling White Grounds, and best Ranunculuses; Mr. John Dick, gardener, Ballindean, for the second variety of Pelargoniums; Mr. William Brow, gardener, Meikle House, for the best Double Anemones, and Mr. Robert Kilgower, florist, Kirkcaldy, for the second Ranunculuses and best Seedling Ranunculuses; Mr. Thomas Spalding, gardener, Arthursstone, for the best Single Anemones, second Double Anemones, second Seedling Ranunculuses, best Scotch Roses, and best Seedling Scotch Roses; Mr. David Stewart, Lilybank, for the second Scotch Roses; Mr. James Kettle, gardener, Glendoig, for the best early Peas, and best early Potatoes; and Mr. John Hampton, gardener, Crescent House, for the best Bouquet of Flowers, second early potatoes, and best Scaresborough Turnips.

Some very fine lettuces were produced from Arthursstone; some very fine early Dutch turnips from Mr. Fergus's garden, Kirkcaldy; some fine preserved apples from Glendoig; some good old onions from Carolina Port; and a variety of excellent vegetables and flowers from Crescent House.

The prizes for seedling ranunculuses were this season given by David Martin, Esq., Roseangle. (*Dundee Courier*, June 22.)

Dundee Horticultural Society. — Sept. 10. The successful competitors were as under:—

Mr. John Hampton, gardener, Crescent House, for first Purple Flake Carnations, first Pink, first Scarlet Bizard, second Scarlet Picotee, first Purple Picotees. Mr. Thomas Spalding, gardener, Arthursstone, for second Purple Flake Carnations, first Scarlet, second Pink Bizard, and second Purple Picotees. Mr. James Kidd, gardener, Rossie Priory, for second Scarlet Flake Carnations, second Pink, second Scarlet Bizard, and first Pink Bizard. Mr. James Smith, gardener, Ellangowan, for first Scarlet Picotees, and first Hollyhocks. Mr. David Stewart, Lilybank, for first Seedling Carnations, and first Seedling Georginas. Mr. James Kettle, gardener, Glendoig, for first Double Georginas. Mr. Thomas Spalding, for the second Double and first Single Georginas. Mr. John Dick, gardener, Ballindean, for first Border Flowers, first Hardy, and first Tender Annuals. Mr. James Kidd, for first Stocks, and second Tender Annuals. Mr. John Hampton, for first Bouquet. Mr. James Kidd, for first Pine-apple, first scarlet-fleshed Melon, first Peaches from hot-house, second variety of Peaches, first Moorpark and Brussels Apricots, first Hamburg Grapes, second Muscat, first White Frontignac, second Early Pears, first Late, first Early Apples, and second variety of Fruit. Mr. John Dick, for second green-fleshed Melon, first Peaches from open walls, first variety of Peaches, first Nectarines from open walls, second from hot-house, second Moorpark Apricots, first four bunches of Grapes, first Muscat Grape, first Grizzly Frontignac Grapes, second Early Apples, second Keeping, first variety of Fruit, first variety of Vegetables, and best Gooseberry and Black Currant Wines. Mr. James Kettle, for first green-fleshed Melon, second open wall Peaches, first Keeping Apples, first Figs, and first Onions. Mr. John Walker, gardener, Airlie Castle, for second scarlet fleshed Melon, first Celery, and first Altringham Carrots. Mr. Thomas Spalding, for second Peaches from hot-house, first hot-house Nectarines, first variety of Plums, first Green Gage, first Muscadine grapes, first Jargonelle Pears, first Gooseberries, and first Cherries. Mr. J. Lillburn, gardener, Castle Huntly, for first white Magnum Plums. Mr. P. Adam, gardener to Mr. Martin, Roseangle, for second Jargonelle and first Early Pears. Mr. William Brow, gardener, Meikle House, for largest Apples. Mr. David Mitchell, gardener, Carolina Port, for first White Currants, first Cauliflower, first White Currant and Gooseberry Champagne Wines. Mr. Thomas Watt, gardener, Ruthven House, for first Red Currants. Mr. James Kidd, for first Beet and first Late Cabbage. Mr. James Smith, for first German Greens. Mr. Anderson, Cortachy, for first Long Red Carrots. Mr. John Hampton, for first Savoy. Some beautiful Carnations, Picotees, and Seedling Georginas were exhibited from Dudhope Nursery; some fine Double Georginas from Lilybank; some large Turnips from Carolina Port; some fine Roses from Mayfield; some very large Horn Radish from Rossie Priory; and some fine Pears from Mr. Greig's garden, Leven; also a Yucca filamentosa, and other plants in flower, and a large variety of annuals, from Scouringburn Nursery. The London Medal was gained by Mr. James Kidd, Rossie Priory. (*Dundee Courier*, Sept. 14.)

Rail Cottage-Garden Society. — Aug. 10. The object contemplated in forming this Society was to promote and diffuse a taste for flowers, and the rare and more useful sorts of vegetables, with a knowledge of their culture. For some years premiums were awarded for the best variety of early potatoes, introduced to the village within the year. Eighteen of the most approved varieties of that excellent root have, in consequence, been reared amongst the members, and this year it was thought unnecessary to continue premiums for an article brought to such perfection. As a substitute, premiums were offered for the best laid out flower-plot, the ground not to exceed a fall. Five candidates started for this prize. The judges awarded the first to the president, David Moyes, a man who has seen nearly fourscore summers; he, to encourage junior members, relinquished his right in their favour. The articles in competition for this year were, cauliflower, cabbage, lettuce, turnips, pinks, violets, nosegay, carrots, onions, gooseberries, cow cabbage, or Cesarean kale (seeds from Mr. Loudon), carnations, &c. Sweepstakes were taken, besides, for violets, standard cherries, seedling gooseberries, and carnations. There were, in all, fifty-two premiums, of which James Moyes gained twelve; Peter Robertson, ten; Robert Bell, eight; Mr. John Duff, the village schoolmaster, six; David Moyes, five; Alexander Anderson, four; John Robertson, a young boy of fourteen, four; John Stein, two; Robert M'Lagan, also a young boy, one, being second for a very neat flower-pot. The interest excited by the Society to useful and pleasant recreations, amongst a deserving class of people, adds materially to their own comforts, and the progress they have made must be gratifying to its supporters. We are glad to observe similar societies springing up in the neighbourhood, and shall with much pleasure give publicity to their proceedings. (*Perth Courier*, in *Country Times*, Aug. 23.)

Baledgarthno Cottage-Garden Society. — Aug. 25. The show of vegetables, fruits, and flowers exhibited now and at their Meeting in July consisted of early potatoes, cauliflower, early cabbage, cherries, peas, turnips, strawberries, gooseberries, black and red currants, and nosegays of flowers, in the month of July; and apples, onions, carrots, carnations, georginas, single and double hollyhocks, double and single nosegays, late cabbage greens; and three prizes were awarded for the neatest-trained flowering shrubs on the front walls of the cottages, and flowers in the adjacent borders, in August; in all sixty-three prizes: of which eight were awarded to David Rollo; seven to William Lumsden; seven to David Lindsay, six to Robert Bain; five to John Scott; four to Alexander Peddie; four to William Baxter; four to James Peebles; four to Andrew Peebles; three to Donald Forbes; three to James Clarke; two to Donald Duff; two to John Bickerton; one to David Watson; one to William Patterson; one to

Andrew Thom; and one to John Elder. Many of the articles exhibited were excellent of their kind, and the whole reflected credit on the first efforts of the candidates. The judges were gardeners from the neighbourhood, who expressed their high approbation of the articles produced at each of the Shows, and also at the good humour which prevailed amongst the competitors when the prizes were announced. The judges, following the laudable example set them by their professional brethren, who attended as judges at the village of Rait, requested to be allowed to become contributors to the funds, and their names were inserted in the list of honorary members. On the principle that mankind esteem most what costs them something, the promoters of the institution wisely considered, that it would be proper for each member to contribute a small sum towards the funds to entitle him to compete and rank as a member; but it is proper to mention, that the institution originated with, and is chiefly supported by, the noble proprietor, Lord Kinraird; and it must be gratifying to the benevolent mind of that young nobleman, to observe that his endeavours to enhance the pleasures, and ameliorate the condition, of this class of his dependents, have had such an auspicious commencement. Institutions of this nature are well calculated to produce habits of industry, sobriety, order, and cleanliness; and that neatness which commences in the flower border, will be carried into every part of the domestic arrangements belonging to the peaceful cottage. Their home will afford comforts, which will render it endearing; and when once cottage-garden societies have become general, Cruickshanks, and lectures on temperance societies, will only be recollected as "things that have been." (*Perth Courier*, in *Country Times*, Sept. 13.)

ABERDEENSHIRE.

Aberdeenshire Horticultural Society. — Aug. 25. At the Fifth Competition medals were awarded to the following competitors: —

Mr. David Gairns, gardener to J. M. Nicholson, Esq., of Glenbervie, the large medal, for the best twelve peaches (the Royal George); the largest and heaviest twelve gooseberries (the Red Huntsman, Wellington's Glory, and Green Troubler); one of the finest weighed 1 oz., and the whole weighed 10 oz. Also, for the best twelve Stage Carnations (viz. Gould's and Strong's Duke of York, Ely's Major Rippon, Hodge's Jupiter, Brookes's Lord Eldon, Strong's Linnaeus, Hall's Tarara and Sir W. Wallace, Cartwright's Rainbow, Hoyle's Magnificent, Gairns's Conqueror, and one unknown); likewise for the first twelve Stage Pinks, and the third and fourth best Seedling Carnations. Mr. William Davidson, jun., the small medal, for the best twelve Double Georginas (viz. Imperiosa, Perfecta, Rara, Blanda, Fimbriata, Delicata, Juno, Morning Star, Lady Grantham, Black Turban, Violet Purple, and Dwarf Yellow). Mr. Davidson had also the second and third best twelve Double Georginas, as well as the second extra-prize, a package of new and rare Exotic Plants in full bloom (among which we observed the *Fuchsia microphylla*, embraced by the parasite *Cuscuta nepalensis*, *Fuchsia virgata*, *F. multiflora*, *F. gracilis* var. *tenella*, *Lilium longiflorum*, *Bouvardia triphylla*, *Geranium ardens majus*, *Maurandya antirrhiniflora*, *Semprevivum tabulaforme*, *Calceolaria bicolor*, and *C. arachnoidea*, with many of Mr. Douglas's new plants; and, in a separate pot, a large plant of the *Dracæna australis*).

Small medals were also awarded to —

Alexander Irvine, Esq., of Drum, for the best and third best plums (the *Précoce de Tours*, and the White Primordian). Mr. William Anderson, gardener to D. Young, Esq., Cornhill, for the largest and best three bunches of White Grapes, name unknown; for the second best Melon (the Ostrich Egg, green-fleshed); and the third extra-prize, the Queen Pine-apple. Mr. James Walker, nurseryman, for the best and second best twelve Seedling Carnations, and the third heaviest and largest twelve gooseberries. Mr. James Alexander, gardener to John Thorburn, Esq., of Murtle, for the best twelve Jargonelle Pears; and the best six Apricots, grown on the open wall. Mr. George Johnston, gardener to the Right Hon. the Earl of Aberdeen, at Haddo House, for the best Melon (Isaphan, green-fleshed). Mr. Alexander Brown, gardener to John Garloch, Esq., Heathcot, for the best twelve Dessert Apples (the Juncating White). Mr. William Gallow, gardener to Sir Michael Bruce, Bart., Scotstown, for the best quart of Gooseberries (the Yellow Sulphur). Mr. William Smith, gardener to James Hadden, Esq., Grandholm Cottage, for the first extra-prize, two dozen preserved Apples (the Oaken Pine).

The other successful competitors were: —

Mr. Peter Archibald, gardener to William Moir, Esq. of Park, the second best Apples (the Juncating), and the second best Pinks. Mr. Peter Cheyne, Esq., Loch-head, the second largest and heaviest twelve Gooseberries (the Lancashire Lad). Mr. William Wales, gardener to Colonel Duff of Fetteresso, the second best three Clusters of Grapes (the Hamburg, and Black Prince). Mr. Edward Keason, gardener at Drumtochty, the second best Peaches (the Royal George). Mr. J. G. Davidson, gardener to Dr. Forbes, Old Aberdeen, the second best Jargonelle Pears. Mr. Alexander Pittendrigh, gardener at Ashgrove, the second best Plums (the Blue Gage). Mr. James Reid, Springbank, the second best quart of Gooseberries. Mr. Alexander Milne, Carnation Field, the second best twelve Stage Carnations. Mr. John Wood, gardener to Sir R. D. H. Elphinstone, the second best six Apricots, from the open wall. Mr. Robert Burnett, gardener to G. Forbes, Esq., Springhill, the third best three clusters of Grapes (the Black Hamburg). Mr. John Davidson, gardener at Dunottar House, the third best twelve Apples (the Juncating). Mr. Alexander Malcolm, gardener, Damside, the third best quart of Gooseberries (Langley's Green). Mr. Thomas Milne, nurseryman, Sunnyside, the third best twelve Pinks. Mr. Charles Berry, gardener to R. Barclay Allardice, Esq., of Ury, the fourth best quart of Gooseberries. (*Aberdeen Journ.*, Sept. 1.)

Nov. 3. At the Sixth Competition medals were awarded to the following competitors: —

Peter Archibald, gardener to William Moir, Esq., of Park, the large silver medal, for first and second Pears (the Bergamotte d'Automne), the first Beet-root, and the first Celery. A small medal was also awarded to Mr. William Anderson, gardener to D. Young, Esq., of Cornhill, for first Stocks and third Broccoli; also an extra-medal for a very fine collection of Green-house Plants in flower. A small medal was likewise adjudged to Mr. William Fraser, nurseryman, Ferryhill, for the first one-year-old Seedling Forest Trees, and the first two-year-old Seedling Forest Trees. David Chalmers, Esq., of Westburn, for the first and second Apples, the Ribston Pippin. Mr. Duncan Cadenhead, Strawberrybank, for the first and second Carrots, the Altringham. Mr. William Gallow, gardener to Sir M. Bruce, at Scotstown, for the first and second Broccoli. Mr. Robert Adams, schoolmaster, Banchory, for the first and fourth Hollyhocks. Mr. William Lawson, gardener to Basil Fisher, Esq., Devanha House, for the first Onions and

second Celery. The other successful competitors were, Mr. Joseph Riddoch, gardener to General Burnett, Banchory Lodge, the second and third Hollyhocks. Mr. William Wales, gardener to Colonel Duff of Fetteresso, the second Beet-root. Mr. James Wright, gardener, Westfield, the second Onions. Mr. Alexander Pittendrigh, gardener at Ash Grove, the third Apples, the Ribston Pippin. Mr. John Davidson, gardener at Dunottar, the third Pears, the Bergamotte d'Antonne. Mr. John Wood, gardener at Logie Elphinston, the third Onions. Mr. Edward Keisson, gardener at Drumtochty, the third Carrots. Twelve Onions, from the garden of Alexander Thomson, Esq., of Banchory, which came too late for competition, were found, upon comparison, to be equal to the first prize Onions. Mr. George Bothwell, Greenbank, exhibited twelve Potatoes, weighing half a stone, the produce of one seed of the American Purple. Mrs. Thomson, sen., of Banchory, exhibited a very sound Carrot, weighing 3½ lbs. raised in her garden. There was also shown an Apple, in a very perfect condition, the Oaken Pine, of crop 1829, from the garden of Provost Hadden, Grandholm Cottage; it was one of the Apples competed with in July last, and was at that time laid aside, without any care whatever. A very large and beautiful Apple, the Emperor Alexander, was shown, from the garden of Polgownie Lodge.

There was submitted to the Society a new invention of pottery, for the protection of carnations, and similar plants, from earwigs, and other insects. The article was highly approved of by the Society. It was suggested by Mr. Diack, and executed by Mr. Allardyce, who will very soon have a stock of them prepared. It is called "Diack's Insect Guard."

Colonel Skene and Dr. Mellis, both of the Honourable East India Company's service, were enrolled members of the Society. (*Aberdeen Journal*, Nov. 10.)

ART. IX. Obituary.

DIED, on the 7th instant, of a consumption, at Bowden, aged forty-eight, Mr. *Edward Hobson* of Manchester. His death will be much regretted, and his loss severely felt, by all who knew him. His situation was that of a superior servant in a respectable manufacturer's establishment, where he spent many of his latter years in the honest and indefatigable discharge of his duties, and attention (during working hours) to his master's interest. With only a common reading and writing education, but with the blessing of good natural talents, and by the most determined and vigorous perseverance at all times, when unoccupied in the duties of his situation, he had become a thoroughly skilful botanist, mineralogist, geologist, entomologist; nay, almost a general naturalist, not contenting himself with mere theories, but advancing into the higher and more physiological studies. His *Múscí Británnici* stand a recognised monument of the depth of his knowledge, and the soundness of his judgment in that particular and intricate portion of the science of botany, as the general reference made to the work by Drs. Hooker and Taylor will amply testify. In botany, mineralogy, and entomology, he had formed considerable collections.

It will thus be seen that he was unceasingly industrious. He was withal of modest and frugal habits, warm and sincere in his attachments. Humble as his circumstances certainly were, yet such was his ardour in the pursuit of natural science, that his assistance has frequently been given to those whose circumstances were more humble than his own.

It was no small gratification to the writer of this article, when performing the last sad office to the remains of this much esteemed man, to see the big tear stealing silently down the manly cheeks of many of his scientific acquaintances. This speaks volumes as to his character.

It is highly probable that the fatigues he frequently underwent, and exposure to the inclemencies of the weather, added to other privations, occasioned the illness which terminated in death. He has left a numerous family to lament his loss. — *J. Ashworth. Sept. 1830.*

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